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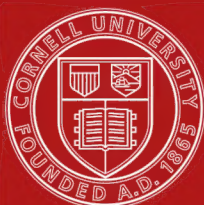


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A SEARCH OF TRUTH

IN THE

SCIENCE OF THE HUMAN MIND,

PART FIRST.

A SEARCH OF TRUTH

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PART FIRST.

BY THE REV. FREDERICK BEASLEY, D. D.

PROVOST OF THE UNIVERSITY OF PENNSYLVANIA, MEMBER OF THE
PHILOSOPHICAL SOCIETY OF PHILADELPHIA, AND A PRESBYTER OF
THE EPISCOPAL CHURCH.

Ζητω την αληθειαν υφ' ης υδεις πρωτοε εβλαβη.—Marc. Anton.

Inter silvas Academi quærere verum.—Horace.

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EASTERN DISTRICT OF PENNSYLVANIA, to wit:

BE IT REMEMBERED, that on the 18th day of January, in the forty-sixth year of the independence of the United States of America, A. D. 1822, **FREDERICK BEASLEY**, D. D. of the said district, hath deposited in this office the title of a book, the right whereof he claims as author in the words following, to wit:

A Search of Truth in the Science of the Human Mind. Part first.

By the Rev. Frederick Beasley, D. D. Provost of the University of Pennsylvania, Member of the Philosophical Society of Philadelphia, and a Presbyter of the Episcopal Church.

Ζητω την αληθειαν υφ' ης υδεις ποποτε εβλαβη.—Marc. Anton.

Inter Silvas Academi quærere rerum.—HORACE.

In conformity to the act of the congress of the United States, intituled “An act for the encouragement of learning, by securing the copies of maps, charts, and books, to the authors and proprietors of such copies, during the times therein mentioned.” And also to the act, entitled, “An act supplementary to an act entitled, “An act for the encouragement of learning, by securing the copies of maps, charts and books, to the authors and proprietors of such copies during the times therein mentioned,” and extending the benefits thereof to the arts of designing, engraving, and etching historical and other prints.”

D. CALDWELL,
Clerk of the Eastern District of Pennsylvania.

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DEDICATION

TO THE

RIGHT REV. JOHN HENRY HOBART,

**BISHOP OF THE PROTESTANT EPISCOPAL CHURCH IN THE STATE
OF NEW YORK.**

Right Reverend Sir,

IN venturing upon so important an undertaking, as the publication of a work upon the Science of the Human Mind, I know of no one to whose patronage and protection, I could more properly recommend it, than the friend of my youth, and the companion of my early studies. From you, no doubt, it will meet with as favourable a reception as it deserves, its faults which are many, being viewed with a partial eye, and its merits, if it has any, being justly estimated. In this volume, allow me to present to you, as the best offering I have to make, and the pledge of my unabated attachment, the first fruits of those intellectual toils, which we commenced together in college. Now, that we have arrived at full maturity of age, delightful is the recollection of those days, when we indulged ourselves without restraint, in the "calm pursuits of mild philosophy," under the direction of our venerable president Smith, whose name will be revered, while science, learning and eloquence, shall have votaries in our country; and enjoying the society of Gaston, Mercer, and our ever lamented Kollock, equally the ornaments of the bar, the pulpit, and the deliberative councils of the nation,

and whom, I am assured you join me in proudly recognising as our mutual friends. If to such judges as yourself, and those who are still living of the persons just mentioned, I shall be able to afford in the perusal of this performance, any share of that satisfaction and instruction, which I have derived from its execution, as well as from those preparatory investigations which led to it, my highest ambition will be gratified.

I certainly should not have had the presumption, to obtrude upon the public a work of such magnitude, and upon a topic so difficult and interesting, if I had not conceived, that I had something new, and not altogether unimportant to communicate. You are aware that in the College of Princeton, to which we were attached, after the fanciful theory of Bishop Berkeley, as a kind of philosophical day-dream, had maintained its prevalence for a season; the principles of Reid, and the Scottish metaphysicians superseded it, and during the period of our residence in the seminary, acquired and maintained undisputed sway. At that time, I, together with all those graduates who took any interest in the subject, embraced without doubt or hesitation the doctrines of the Scottish school. Since, however, I came in possession of the station, which I at present occupy in the College of Philadelphia, my duty as well as inclination, led me to renew my inquiries into this branch of science. The farther I proceeded, the more interesting the subject became, and I determined, if possible, to compass the whole ground, by consulting every author who had written upon it, both in ancient and modern times. I had advanced but a short distance upon this extended plan, before I thought I perceived, that the Scottish metaphysicians had either inadvertently or wilfully, done their predecessors very great injustice, in their animadversions upon their writings, ascribed to them opinions which they never held, assumed to themselves the merit of broaching and promulging the very doctrines which

they taught, and, at the same time, had fallen into the grossest errors in that new system of pneumatology, which they claimed the credit of introducing. Dr. Reid, who is, undoubtedly, the best writer upon these topics that Scotland has produced, discovering at times, considerable clearness of understanding, and neatness and perspicuity of style, acknowledges, "that he never thought of calling in question, the principles commonly received with regard to the human understanding, until the *Treatise of Human Nature* (Mr. Hume's,) was published. The ingenious author of that treatise," says he, "upon the principles of Locke, who was no sceptic, has built a system of scepticism, which leaves no ground to believe any one thing, rather than its contrary. His reasoning appeared to me to be just; there was, therefore, a necessity to call in question the principles, upon which it was founded, or to admit the conclusion."*

How far the Dr. is correct in asserting, that Mr. Hume built his system of scepticism upon the principles of Mr. Locke, and that we must either call in question those principles, or admit his conclusion, it becomes my province to determine during the course of this inquiry. At present, I would barely crave leave to remark, that in my view of the subject, it was at this very point in which Dr. Reid commenced, that we find his capital mistake—that mistake which led to many of his subsequent errors and failures. He saw the absurd and preposterous conclusions of Mr. Hume, and that, with an air of confidence and self-complacency so peculiar to him, he professed to ground them upon the principles of Mr. Locke; but he did not take sufficient pains to ascertain, whether or not, those were the genuine doctrines of Locke. He evidently allowed the absurdities of Mr. Hume's system to infect his mind, with the taint of a fatal prejudice, against the doctrines of all preceding philosophers, who had written upon

* See *Dedication to Reid upon the Mind*.

this subject, before he subjected himself to the toil of fairly determining, whether such opinions were justly attributed to them. His mind, as I conceive, commenced its inquiries at the wrong point, and under the influence of prepossessions greatly calculated to mislead it. Hence the too easy credulity, with which the Dr. embraced the opinion, that all the philosophers agreed in receiving the ideal theory, which is the groundwork of his system, and which, resting upon so sandy a foundation the whole superstructure, must soon go to ruin. He contemplated the theories of all preceding philosophers, through the discoloured medium of Mr. Hume's sceptical conclusions; and he might as well have expected to determine the doctrines of the gospel, through the medium of that writer's sceptical doubts about religion. I trust, I shall be able to show to your entire satisfaction, and that of the learned world, that, instead of scepticism being inlaid in the old theory, as the Dr. affirms, there is no kind of connection, between the premises of Mr. Hume or Berkeley, and the principles of Mr. Locke. And, should I be so fortunate as to succeed in accomplishing this task, I doubt not you will perceive, not only will Mr. Locke and other philosophers, be restored to those well-merited honours, from which, for a time, at least, they have been degraded; but no inconsiderable service will have been rendered also, to the interesting science of human nature. No small part of that task, which we have to perform in the cultivation of science, consists in the detection and exposure of errors; and the very first step, which we make in our attempts to advance still farther towards perfecting any of the branches of philosophy, is to ascertain with precision and accuracy, the limits to which it has been already extended, and nicely to mark, in all cases, the lines of separation between what is true and false in the received doctrines about it; or in other words, determine whether philosophers have succeeded or failed, in their attempts to furnish solutions of the various

phenomena of nature. This is a preliminary step, indispensable to the future progress of any branch of learning. How far I have succeeded in accomplishing this task in the present work, and what degree of credit is due to those views of the several topics discussed, which may be considered as new and original, must be left to you and other able judges to decide. One merit in the performance, I think I may claim with confidence and without presumption, and that is, that throughout all my inquiries, I have sought with the greatest impartiality and solicitude, to obtain access to the truth, and assign to each author his due proportion of merit in its discovery.

This performance has naturally and unavoidably assumed, under my hand, much more of a polemical cast, especially in the commencement, than I could have desired; but for this, those are responsible who have undertaken to call in question, and subject to the hazard of doubtful disputation, doctrines which, previously to their times, had been considered by all learned and scientific men, as established in the science of the human mind. It is they who have essayed to subvert old foundations, and have opened the fountains of controversy upon this subject, and if the streams of bitterness should flow, they have nothing to accuse but their own imprudence and temerity. If in some instances, it shall be thought by the abettors of the system recently broached in metaphysics, that I have treated with undue severity, the Scottish writers upon this subject, let the provocation which they have given to the votaries of this science be my apology. Those who have undertaken to decry the discoveries of their predecessors, can have no just cause of complaint, if they shall find their own claims, zealously, and even sharply contested. In the Republic of Letters, where the only dominion which prevails, is that of reason and argument, a perfect freedom of thinking is allowed; and under the exercise of this undisputed right, error can calculate upon nothing

but complete detection and exposure, sophistry only upon having the veil of its fallacies removed, while ignorance and imbecility, can expect no quarter from the overpowering influence of ridicule and contempt.

There is scarcely a fundamental doctrine in the whole system of Locke, which Dr. Reid has not endeavoured to unsettle; and in fact, if his representation of the philosophy of Locke be true, the *Treatise upon Human Understanding*, should be laid upon the shelf of the student, as useless, and fitted only to engage the attention of those who are curious to become acquainted with the visionary schemes of ingenious men, and his whole system considered as completely superseded, as is that of Aristotle in Natural Science. Now to those who believe, that this representation of the case is altogether unfounded, and that the theory of Mr. Locke, never has been, and never can be overturned, but that, in all fundamental points, it will remain entire, as long as the human mind shall retain its present properties, be governed by the same laws, and exhibit the same phenomena; surely some freedom of animadversion should be indulged, in reference to the opinions of those, who have thus endeavoured to subvert it. The sentiments of Bishop Warburton, in regard to Locke's system, we may rest assured, will at last prevail. "But the sage Locke," says he, "in a letter to Bishop Hurd, supported himself by no system, on the one hand; nor, on the other, did he dishonour himself by any whimsies. The consequence of which was, that, neither following the fashion, nor striking the imagination, he, at first, had neither followers nor admirers; but being every where clear, and every where solid, he, at length, worked his way, and afterwards was subject to no reverses. He was not affected by the new fashions in philosophy, who leaned upon none of the old; nor did he afford ground for the after attacks of envy and folly, by any fanciful hypotheses, which, when grown stale, are the most nauseous of all things." To sustain

this view of **Locke's** philosophy, is one of the purposes attempted to be accomplished in the following work. We solicit only a candid and unbiassed hearing, and have no wish but that reason and argument should ultimately triumph.

Those portions of the work in which, while treating of the grounds of human knowledge, I have been led incidentally to discuss the evidences of the Christian religion, I hope will meet with your approbation. In reference to the subject of miracles, more particularly, I have endeavoured to show, that those which are recorded in sacred scripture, are not only credible upon the ordinary authority of history, but also defensible from all those objections, which have been alleged against them, upon the strictest principles of philosophical investigation; and that our holy faith, in this instance, as in all others, instead of being resolvable into a blind credulity, as its enemies pretend, or reposing itself upon "cunningly devised fables," rests upon the solid foundations of right reason, and the irrefragable conclusions of a sound philosophy.

But it is unnecessary, that I should intrude upon your time and attention, by a long prefatory disquisition. Those talents which you have discovered at every period of life, and which have, at length, elevated you to that exalted station which you now hold, with so much advantage to the church, and honour to your country; will enable you, without any aid from me, justly to decide upon the merits of that production, which is now, not without sentiments of undissembled diffidence and solicitude, I assure you, presented to the public.

In concluding this brief address, I trust I shall be allowed, without subjecting myself to the censure of making an attempt at adulation, to express my decided admiration of those exalted qualities, both of the understanding and the heart, which have given you so distinguished a rank among your fellow citizens. Almost all mankind, are sensible of

that quick intuition, powerful reason, and commanding eloquence, the force of which they daily experience, while witnessing the discharge of your public duties; but to those only who are intimately acquainted with your person, and enjoy the happiness of being the companions of your private hours, is reserved the privilege of witnessing the display of those amiable virtues, and engaging qualities, which shed a benign influence over your domestic state, as well as through a numerous circle of friends, and which need only be generally known to attract to you, the confidence, esteem, and affections of all.

With the highest respect and inviolable attachment,

Believe me, Rt. Rev. and Dear Sir,

Your devoted friend,

THE AUTHOR.

INTRODUCTION.



Est animorum, ingeniorumque nostrorum naturale quoddam quasi pabulum, consideratio, contemplatioque naturæ.

CICERO.

It is somewhere remarked by an intelligent writer, that he thinks the present condition in which man is placed in this world, where perpetual toil and attention are necessary to the search and discovery of truth, is preferable to one in which all truth should be disclosed to his understanding by intuitive perception. One of the purest and most exalted enjoyments of which the human mind is susceptible, is that which it experiences in the pursuit and acquisition of knowledge; and there can be no doubt, that according to the usual wisdom discoverable in the works of the Creator, who annexes a pleasure to every virtuous exertion of the human powers, there is a high degree of satisfaction derived from every effort of the understanding in quest of science. Truth is to the mind of man what light is to the eye, while ignorance and error are like darkness to that sense. And as in the

case of the outward organ, there is such an admirable contrivance for refracting and transmitting the rays of that singular fluid, in order to render visible an exterior world; so also in the mind, there would appear to be constituted no less wonderful organs, to fit it for the perception of what might justly be denominated, in the language of the Peripatetick philosophy, the intelligible world. There is such a congeniality between truth and the human mind, such a nice and exquisite adaptation of the intellectual powers to the reception of this moral light, that it cannot fail to be remarked even by the most superficial observers, whenever we are perusing the works of a good author, all the thoughts which seem spontaneously to arise out of the subject he is treating of, appear only to reflect back upon us the image of our own ideas. This is the only circumstance which gives any colour of probability in fact and experience to the opinion of Plato, to which allusion is so frequently made, that all knowledge is reminiscence, or simply the recollection of what was previously known. This phenomenon, however, is readily explained, without a recurrence to that fanciful doctrine, by admitting what is known to be the fact, that in the original conformation of the mind, there is a wise correspondence or conformity in its powers to those truths, which it is its province to investigate, a correspondence or conformity analogous to that which subsists between the organs of sense and the objects which excite them into action.

But while we do not hesitate to admit the justness and force of the observation, made by the writer beforementioned, that there is a high degree of pleasure to be derived from that intellectual toil necessary to the prosecution and successful issue of our inquiries into nature, and cheerfully acquiesce, moreover, in the disposal of infinite wisdom, which allots it as our portion to become humble labourers in the vast mines of science, and to pay the sweat of our brow, as

a tribute for every morsel of ore which we extract from them; the reflection cannot but frequently obtrude itself upon the contemplative mind, how great would be the privilege, and how sublime the enjoyment, to have the whole system of nature, that "wondrous frame of things," ordained by the Great Contriver, with its magnificent apparatus of materials, its vast and curious machinery, its matchless combinations and contrivances, and the diversified laws of its action unfolded to us. If that scanty pittance of knowledge which we are at present able to attain by the judicious exercise of our limited faculties, affords us so much rational and refined satisfaction; great, beyond all human conception, would be our gratification, were we able to solve all the phenomena, both of the physical and moral world, to trace the mighty chain of causes and effects throughout its whole extent, to explore those fields of nature which lie within the limits of human understanding, and even those which extend beyond them, and which the feet even of Newton, Locke, and the most illustrious philosophers, both of ancient and modern times, never dared to tread. It was a noble saying of Democritus, recorded by Eusebius, that he would rather discover one true cause of things, than be master of the Persian empire. This sentiment was uttered in the genuine spirit of philosophy. If the man whose inclinations are but in a slight degree turned to the pursuits of science, has only to walk abroad into nature, and contemplate for a moment that variegated scene of magnificence and beauty which she holds forth to view, in order to awake within him the most agreeable emotions of complacency and satisfaction, into what a transport of delight and astonishment would he be thrown, were he capable of comprehending the structure and operations of the whole system! On whatever side we direct our view, wonders upon wonders rise, which our straining faculties in vain essay to resolve. In attempting to penetrate into the mysteries of nature, our reason soon finds herself entangled in

inextricable labyrinths. To begin with the simplest and most familiar instances—what are the natures and whence the active energies of the four great elements, earth, air, fire and water, by the multiform combinations and diversified operations of which all those bodies are evolved, and those revolutions performed that compose the Universe? What is the origin and nature of light, that curious and admirable fluid which pervades the hemisphere, and without whose cheering influence the earth would be a scene of dreariness and desolation? What is the nature of that substance which occupies the space between our atmosphere and the sun, for substance there must be some, whether it be that of light, emanating from that luminary, or a medium interposed between it and our planet, through means of which the one body is able to operate upon the other? What is the sun himself, that wonderful object of contemplation and by what secret means is he furnished with such an inexhaustible supply of light? By what hidden process could the universe have been formed, in ascertaining which the geniuses of Thales, Democritus, Plato, Leibnitz, and Des Cartes, together with a host of philosophers both of ancient and modern times, have only indulged themselves in vain conjectures and unsatisfactory hypotheses? What is the occult cause of that great principle of attraction which binds the heavenly bodies to their spheres, and upon which their revolutions depend, but with the results and laws of which only did Newton profess to be acquainted? Coming down to our own globe, we find our understandings posed by mysteries no less insoluble, in the wonderful process by which dead is converted into living matter, and in what the principle of life itself consists, in the inscrutable structure of our own minds, the mysterious ties by which they are connected to our bodies, the mode of their reciprocal action upon each other, the incomprehensible manner in which feeling, perception, thought

and voluntary motion are accomplished. These and many other principles and operations of body and mind, are among the unsearchable arcana of nature, and great and sublime as would be our enjoyment did infinite wisdom think proper to unfold them to us, are, for the present, refused to our most eager curiosity, and perhaps the disclosure of them may be reserved to enhance and invigorate our happiness in a more exalted state of being. Let us not, however, from considering the limited nature of our faculties and the scantiness and imperfection of that knowledge which, with our best exertions, we are able to attain, be discouraged in pushing on, to the utmost extent of our time and opportunities, our philosophical investigations. The triumphs which philosophy has obtained, and the conquests she has made in the dominions of nature, are numerous and important, and have contributed to improve and exalt our species. What new worlds have Newton, Locke, and other illustrious adventurers upon the great deep of science, laid open to our view, in which our spirits, ranging at large, are at once supplied with an inexhaustible store of intellectual wealth, taught to expand with sublime conceptions, and catch the sentiments of greatness from the grandeur of the objects that surround them. For my part, I regard the philosopher, toiling in quest of knowledge, pursuing his peaceful conquests into the departments of nature, and returning from his adventures, laden with the spoils and graced with the trophies of new discoveries, with which to enrich and adorn the treasury of science, as entitled to the highest honours which his fellow-men can bestow, and among the greatest benefactors of his race. He extends the views, enlarges the powers, elevates the character, refines the moral feelings, and multiplies the rational enjoyments of his species, gives new value to their existence and dignity to their nature. His name should be venerated when living, and when dead the noblest monuments should perpetuate his memory.

How much more highly is he deserving of esteem and immortality, than the conqueror who erects a vain renown upon the desolation of countries and the destruction of his fellow-men, and the monuments of whose glory are steeped in tears of the widow and the orphan, and besmeared with the blood of human victims!

BOOK I.—CHAPTER I.

Of the two great departments of Science.

PHILOSOPHY, taken in the widest extent of the term, is naturally divided into two great departments. The first, embraces all the inquiries of the human understanding in reference to matter, its properties and operations, and is denominated physical science; the second is a like investigation relative to mind, and has received the appellation of moral philosophy, or, perhaps, the still more appropriate title of the science of the human mind. Matter and mind, therefore, present the two great dominions which nature opens to our view, and which it is the province of philosophy to explore and cultivate. These are the only substances, with which the powers furnished us by the Creator, enable us to converse. Whether there may not be an intermediate substance, or intermediate substances, between matter and mind, partaking of the properties of neither the one nor the other, it is impossible for us to determine, and would be useless to inquire. That there are various grades of intelligent beings throughout the universe, some of whom as greatly surpass the human race, in the powers with which they are endowed, as the human race does the lowest species of animals possessed of sagacity, would, independently of revelation, seem in a high degree presumable from the analogy of nature. When we reflect upon the numberless links in the chain of animated nature, commencing from man, and terminating in the most insignificant creature possessed of life, sense, and spontaneous motion, it seems extremely improbable, that there are no grades of intelligent beings to fill up the immense chasm between the limited and finite mind of man, and the infinite mind of the creator. We should in vain, however, exhaust the strength of our understandings in dis-

quisitions of this nature. Although it might be gratifying to a laudable curiosity, to attain to knowledge and certainty in such matters, yet, it is not to be denied that they are without the legitimate province of philosophy, and guarded by impassible barriers against the approach and examination of the human faculties. Body and spirit, the material and immaterial principle, are the two substances with which we are perpetually conversant, and to enlarge and extend our acquaintance with which, is the great object of philosophical investigation and research. But it is to be remarked, that our acquaintance, even with these objects that have become so very familiar to us, is not without its limits. It is evident we are furnished with no powers, that enable us to discern the inward structure and constitution of matter or mind, and that all our information concerning them, must be confined to the knowledge we can obtain of their properties and operations. "What the real substance of any thing is, says Newton,* we know not. In bodies we see only their figures and colours, we hear only the sounds, we touch only their outward surfaces, we smell only the smells and taste the savours, but their inward substances are not to be known either by our senses or by any reflex act of our minds." As, then, it is an admitted maxim in philosophy, that we are endowed with no faculties that enable us to penetrate into the hidden essences of things, and from a knowledge of those essences to determine a priori, the results of their future actions upon each other, all our acquaintance with the qualities and operations both of body and mind must depend solely upon experience. Considering this circumstance, it seems astonishing that the method of inquiry proposed by lord Bacon and denominated his plan of induction, when we reflect that its necessity and use are so obvious and important to mankind, not only as a vehicle for the advancement of science, but as

* General scholium, book 3.

an indispensable instrument for the daily and ordinary acquisition of knowledge, should have been so long unknown to the philosophic world. This method of induction teaches the inquirer into nature, instead of indulging the pride of wisdom, and dogmatically pronouncing his decrees and perverting her judgments to suit his own hypothesis, to become the humble pupil of nature, be instructed in her school, and contented with performing the part of a modest and faithful interpreter of her signs; it subjects the investigator of truth to so severe a mental discipline, that he is required to discard all theories not substantiated by ample observation and experience, and not attempt to establish general principles of science, until he has ascended to them through a just gradation, and from a complete and ample collection of facts. It is at once the vehicle by which we attain to those simple lessons of practical wisdom, which are necessary to our safety and well being, and the most sublime discoveries of science. As it naturally falls in with our plan, however, to treat of this method of inquiry during the progress of these dissertations, we dismiss the subject for the present, and proceed, without further delay, to explain the nature, object and uses of the science of the human mind.

The object of pneumatology, or the science of the human mind, is to trace the progress of the understanding in the acquisition of knowledge, to pursue it from its earliest beginnings in those simple perceptions to which it attains by means of the external senses and reflex acts of its own, to its most complex and sublime combinations and conclusions. It ascertains the constituent principles of the mind, solves all the phenomena exhibited by it, penetrates to the deep foundations of truth and certainty, weighs, in the scales of right reason, the different degrees of evidence upon which our assent is grounded, shows in what cases absolute demonstration may be attained, and when we should rest contented with moral certainty, or even strong probability, and, finally,

detects the errors to which we are liable, unfolds the latent sources of them, and points out the true roads that lead, in the various departments of science, to that kind of evidence and certainty, to which, from the limited nature of our faculties, we should yield an entire assent. Certainly no science could be more important, not only as it constitutes in itself a most interesting branch, but as in it are laid the foundations of every other; by its principles their certainty, permanence and usefulness are tested, and the best methods disclosed by which they may be advanced on the way towards improvement and perfection.

CHAPTER II.

On the terms, cause, phenomenon, law of nature, &c.

Nihil fieri sine causa potest. Itaque non sic causa intelligi debet, ut quod cuique antecedit, id ei causa sit, sed quod cuique efficienter antecedit.

CICERO DE FATO.

WE shall endeavour to lay more securely the foundation of our future structure, in a brief attempt to ascertain our ideas and give precise definitions of our terms. The terms enumerated above are sufficiently precise, and convey very clear and distinct ideas, and any further explanation of them would have been unnecessary, had they not been rendered confused and uncertain in their signification by some late disquisitions about them. Aristotle divides causes into four kinds, the material, the formal, the efficient, and the final. The material, denoted the substance or matter out of which things were formed; the formal implied that inward structure or form, from which proceed the outward figure and diversified appearances of objects; the efficient cause, was the principle or agent of motion and change, and the final, was the end or purpose which any thing is intended to serve. The distinctions of material and formal causes have justly been allowed to fall into disuse, since the decline of the Peripatetick philosophy. Efficient causes alone comprehend all that can properly be denominated such in the technical and philosophical meaning of the word. The distinction of final causes, also, is retained in the schools, and implies the ends or purposes intended to be accomplished by the Creator, in the formation of the various parts of nature. Many final causes may have contributed to the formation of the same object. As for instance, one of the final causes of the exquisite construction of a human eye, was, no doubt, to enable us to see; another may have been to extend the sphere of our rational en-

joyment, and a third to display the benignity and power of the Almighty. Final causes, therefore, while they furnish unanswerable arguments in proof of the existence of a Supreme Contriver, have nothing to do, except as motives influencing the mind of the deity, in the production of effects, and of consequence, do not enter into the views or occupy the attention of the philosopher, in his investigations of nature, whose province it is to trace the series of causes and effects, or, in other words, afford solutions of the various phenomena presented to his inspection. It was under this view of the subject, no doubt, and not to throw any slight upon the pursuit of final causes, when such pursuit is directed to its proper object, the proof of the being of a God from the wise contrivances of nature, that Bacon represents the final cause, as a virgin consecrated to the deity, (*virgo Deo consecrata*, by a most beautiful figure,) and therefore, *sterilis barren*, or unproductive of any important results to science.

In the true and philosophical meaning of the term, a cause may be defined to be any agent or principle, existing in physical or moral nature, which contains within itself a power or efficiency to produce an effect, and that effect is denominated a phenomenon, fact or appearance. A law of nature, is the manner or rule by which this cause, agent or principle operates in the production of its effect. For example—the electric fluid, as it exists in nature, is properly regarded as a cause, agent or principle; thunder and lightning, are the phenomena exhibited by it, and the laws or rules of its action are collected and ascertained from observation and experiment. To illustrate the matter still farther. One of the laws of electricity, is, that when one part of nature is positively electrified, and another, in its immediate vicinity, negatively electrified, (to use the language of Franklin) electric sparks pass from the one to the other, and restore the equilibrium. The same may be said of gravity. If there be, as Newton merely conjectures, (for he acknowledges, as will

be seen in due time, that the cause of the gravitation of bodies lies under a veil to him impenetrable,) a subtil and elastic fluid which occasions bodies to be attracted towards each other, and towards a common centre; that fluid would properly be called the cause, agent or principle of gravity. The tendency of all bodies around the earth's surface to its centre, and of all the planets to the sun, are the phenomena, facts or appearances, and the laws of gravity, or the rules by which bodies gravitate, are explained and demonstrated in natural philosophy.

These appear to me to be the true and precise significations of the aforementioned terms, and by carrying along with us in our inquiries distinct ideas, we shall find many difficulties removed, and obstructions surmounted which might embarrass and impede our progress. The great object of philosophical investigation, as has been frequently remarked, is to trace the chain of causes and effects; and since it is impossible to the human mind, from the imperfection of its powers, to pursue causes originally through their train of operation to the production of their effects; it is evident, that the only legitimate mode of procedure, and that from a strict and close adherence to which the modern schools are characterised, is, in the first instance, to go in quest of phenomena, and after a careful collection, examination and comparison of these, to establish principles and attempt solutions. From an observation of facts to ascend to their causes, and when once adequate causes have been fully ascertained, apply them to the solution of future phenomena, is the great province of the inquirer into nature. *Hoc opus, hic labor est.* It is true that in the highest and most appropriate sense of the word, God is the only efficient cause or agent in the universe, since every thing in nature, throughout its whole frame and constitution, and all its diversified operations, must either immediately or remotely proceed from him; and it is probable, moreover, that it will ever remain an insoluble pro-

blem in science, whether he accomplishes every object and gives rise to every result by his own immediate presence and agency, operating always as the remote and ultimate cause behind the scene; or whether, after having communicated to matter and mind their several powers, and impressed upon them the laws of their action, he has rendered his farther interference unnecessary in conducting their various operations. There is nothing, however, unphilosophical or inconsistent with our ordinary habits of thinking, in supposing, that he has originally endowed both material and immaterial substances with a power or efficacy to produce certain results, and to these substances we give the title of secondary causes, agents or principles. He is the great primary cause of all things; all other things act in obedience and subordination to him. Every phenomenon in nature is one link in the vast chain, whose last link is fastened to the throne of heaven, or to use the language of lord Verulam, *summum naturalis catenæ annulum, pedi solii Jovis affigi.*

As abstract truth is always best illustrated by examples, take for our present purpose, that to which I have already adverted. We discover from daily experience that all bodies upon the earth's surface gravitate towards its centre, and Newton has demonstrated that the planets gravitate towards the sun. This is the first link in the chain of causes and effects. When we ask the question, what can be the cause of this singular fact? Philosophy answers, that it is referable to the law of attraction or gravitation, under which some undiscovered principle acts. This is the second link in the chain. Admitting that this principle, which occasions the tendency of bodies to each other, were discovered to be a gaseous and elastic fluid, if the inquiry be continued in what manner can this principle cause bodies to tend towards each other, the only satisfaction we can give to the inquirer, is, that it proceeds from some inherent virtue or efficacy subsisting in it. Should we be still farther interrogated and required to tell from

whence this power or efficiency is derived, we can trace it only to the hand of God. This is the last link in the chain. And we shall perceive, upon a slight examination, that every effect throughout the whole compass of nature, when traced back to its source, will be found to have originated in the power of the Almighty. The corn is ground by the mill-stone as an agent; the mill-stone is set in motion by a machinery adjusted to the purpose; the machinery is put into action by a wheel propelled by the force of a stream of water; the stream of water descends in its channel by the force of gravity, and the principle which occasions gravity derives its force from the Supreme Contriver. The first are all subordinate agents, operating under the controul and subject to the will of the prime mover.

Dr. Samuel Clarke, whose opinions are always to be held in profound respect, as in depth of penetration and clearness of understanding he is almost unequalled, in his answer to Collin's treatise concerning liberty and necessity, objects to the use of the term necessary agent, as involving an absurdity, since the very expressions imply that such objects do not act, but are only acted upon. Under this view of the subject he would restrict the term agents to those things only which have the power of originating motion, such as the Supreme Being, and those creatures which he has rendered capable of voluntary action. The meanings which we annex to our words are not, perhaps, very important, provided we take especial care, that the same collection of simple ideas shall always enter into the complex one denoted by them. If we adopt the definition of Dr. Clarke, and consider agents as those things only which possess the power of originating motion, then all those principles existing in the physical world, which are incapable of voluntary action, may be regarded as instruments, (as they undoubtedly are,) fulfilling the purposes of the real agents. I must confess, however, that I have a very distinct idea of necessary as well

as voluntary agents, and it is evident that mankind were influenced by impressions of this kind in the formation of the active verbs of all languages, in which actions are ascribed to objects incapable of volition, as when the sun is said to give light to the earth, the stream to overflow its banks, lightning to rive the oak, and noxious effluvia to occasion disease. Nor will the Atheist be able to derive any advantage from this phraseology, when it is kept in mind, that the doctrine strenuously maintained, is, that every secondary or necessary agent which exercises its influence in producing effects, must have received that influence from him whose power only is undervived.

CHAPTER III.

The opinions of Philosophers, concerning the terms, cause, phenomenon, law of nature, &c.

Felix, qui potuit rerum cognoscere causas. VIRG. GEO. 2d. 490.

THAT we may not appear to have given arbitrary definitions of our terms, we shall next show that the meanings which we annex to them correspond with those which have been assigned them by the best philosophers, both of ancient and modern times. Under the division of efficient causes, Aristotle comprises all that are properly entitled to that denomination, when we speak with technical accuracy; and accordingly he defines philosophy to be a knowledge of causes. The expressions of Cicero prove that his ideas of a cause exactly coincide with those which we have endeavoured to establish. “Itaque, non sic causa intelligi debet,” says he, “ut quod cuique antecedit id ei causa sit, sed quod cuique efficienter antecedit.” That is to be deemed a true cause, not merely which precedes another thing, but that which, being prior to it, has efficiency to produce it. Mr. Locke gives the following account of the relation between cause and effect. “In the notice our senses take of the constant vicissitude of things, we cannot but observe that several particulars, both qualities and substances, begin to exist; and that they receive this their existence from the due application and operation of some other being. From this observation we get our ideas of cause and effect. That which produces any simple or complex ideas, we denote by the general name, cause, and that which is produced, effect. Thus finding that in that substance which we call wax, fluidity, which is a simple idea which was not in it before, is constantly produced by the application of a certain degree of heat, we call the simple idea of heat, in relation to fluidity in wax the cause of it, and fluidity the effect. So all finding

that the substance wood, which is a certain collection of simple ideas so called, by the application of fire is turned into another substance called ashes, i. e. another complex idea, consisting of a collection of simple ideas, quite different from that complex idea which we call wood; we consider fire in relation to ashes as cause, and ashes as effect. So that whatever is considered by us to conduce or operate to the producing any particular simple idea, or collection of simple ideas, whether substance or mode which did not before exist, hath thereby in our minds the relation of a cause, and so is denominated by us. For to have the idea of cause and effect, it suffices to consider any simple idea or substance as beginning to exist by the operation of some other, without knowing the manner of that operation.”* This account so exactly corresponds to the doctrine held by us, that we think it unnecessary to comment upon it. That the word agent, also, is used by Mr. Locke with precisely the same meaning as that which we have annexed to it, will appear from what he says in reference to the origin of our idea of power. “The mind being every day informed by the senses of the alteration of those simple ideas it observes in things without, and taking notice how one comes to an end and ceases to be, and another begins to exist which was not before; reflecting also on what passes within itself, and observing a constant change in its ideas, sometimes by the impressions of the outward objects of the senses, and sometimes by the determination of its own choice; and concluding from what it hath so constantly observed to have been, that the like changes will for the future be made in the same things by the like agents and by the like ways, considers in one thing the possibility of having any of its simple ideas changed, and in another the possibility of making that change; and so comes by that idea which we call power.” Here we find that objects of the

* Treatise on Understanding, book 2. ch. 26.

senses as well as the principles of our minds are represented as agents operating to produce alterations in things. Thus we say," continues Mr. Locke, "fire has a power to melt gold, that is, to destroy the consistency of its insensible parts, and consequently its hardness, and make it fluid; and the sun has a power to blanch wax, whereby the yellowness is destroyed, and whiteness made to exist in its room."* When these two passages are compared, it is evident, that the doctrine maintained by Mr. L. and which is exactly conformable to that which we have already assumed, is, that heat in the sun, or in a culinary fire, is that principle, cause or agent, which possesses a power or efficiency to blanch wax and dissolve gold. It is true, that this power and efficiency in material and finite agents cannot be original and underived, since there is no other Being who can possess underived power, but he who is independent and eternal: but there is no more difficulty in supposing that the Creator can endow some portions of the material world with the power to operate upon and produce alterations in others and in mind also, than there is in supposing that he hath communicated to living creatures the power of voluntary motion. These matters appear extremely plain and incontrovertible, and scarcely worthy of such detailed consideration; but the purpose for which we bring them forward will be obvious during the progress of this discussion.

The opinions of Sir Isaac Newton upon this point, are similar to those which were entertained by the philosophers beforementioned. "†Gravity," says he, "must be caused by an agent acting according to certain laws. In prescribing his rules of philosophising, causes are always referred to as principles existing in nature, and operating to produce their results. We are to admit, according to him, no more causes

* Treatise on Under. book 2, ch. 21.

† Newton's Works, vol. 4, p. 438.

of things than are both true and sufficient to explain the appearances; and again, to "the same natural effects we are, as far as possible, to assign the same causes." What can such expressions mean but such causes or principles as contain within themselves a power or efficiency to produce their results. Still more decisive proof of his views on this subject may be derived from the following passages of his works. "Qua causa efficiente hæ attractiones peragantur, id verò hic non inquirō. Quam ego attractionem appello, fieri sanè potest ut ea efficiatur impulsu, vel alio aliquo modo nobis ignoto. Hanc vocem attractionis ita hic accipi velim, ut in universum solummodo vim aliquam significare intelligatur, quâ corpora ad se mutuò tendant: cuicunque demum causæ attribuenda sit illa vis. Nam ex phænomenis naturæ illud nos prius edoctos oportet, quænam corpora se invicem attrahant, et quænam sint leges et proprietates istius attractionis; quam in id inquirere par sit, quænam efficiente causa peragatur attractio." (*Optic ques. 23.*) Again he says, in the same treatise. "Atque hæc quidem principia considero, non ut occultas qualitates, quæ ex specificis rerum formis oriri fingantur; sed ut universales naturæ leges, quibus res ipsæ sunt formatae. Nam principia quidem talia revera existere, ostendunt phænomena naturæ; licet ipsorum causæ quæ sint, nondum fuerit explicatum. Affirmare singulas rerum species, specificis præditas esse qualitatibus occultis, per quas ea vim certam in agendo habeant, hoc utique est nihil dicere. At ex phænomenis naturæ, duo vel tria derivare generalia motus principia, et deinde explicare quemadmodum proprietates et actiones rerum corporearum omnium ex principiis istis consequantur, id vero magnus esset factus in philosophiâ progressus, etiamsi principiorum istorum causæ nondum essent cognitæ." To the same purport in his principia he proceeds. "Phænomena cælorum et maris nostri per vim gravitatis exposui, sed causam gravitatis nondum assignavi. Oritur atque hæc vis a causa aliqua, quæ penetrat ad usque centra Solis

et Planetarum, sine virtutis diminutione; quæque agit non pro quantitate superficierum particularium in quas agit, (ut solent causæ mechanicæ) sed pro quantitate materiæ solidæ; et cujus actio in immensas distantias undique extenditur, decrescendo semper in duplici ratione distantiarum. Rationem verò harum gravitatis proprietatum ex phænomenis nondum potui deducere, et hypotheses non fingo.*”

* The English reader will find the above passages of Newton thus translated by Dr. Clarke in his fifth reply to Leibnitz.

What the efficient cause of these attractions is, I do not here inquire. What I call attraction may possibly be caused by some impulse or some other way unknown to us. I use the word attraction only in general to signify the force by which bodies tend towards each other, whatever may be the cause of that force. For we must learn from the phenomena of nature, what bodies attract each other, and what are the laws and properties of that attraction, before it be proper to inquire what the efficient cause of attraction is. Again—I consider these principles not as occult qualities, imagined to arise from the specific forms of things; but as universal laws of nature, according to which the things themselves were formed. For that such principles do really exist, appears from the phenomena of nature, though what the causes of them are, be not yet explained. To affirm that every distinct species of things, is endued with specific occult qualities, by means whereof the things have certain active powers, this, indeed, is doing nothing. But to deduce from the phenomena of nature, two or three general principles of motion, and then to explain how the properties and actions of all coporeal things follow from these principles; this would be a great progress in philosophy, though the causes of those principles were not yet discovered. Again—I have explained the phenomena of the Heavens and the sea by the force of gravity; but the cause of gravity I have not yet assigned. It is a force arising from some cause which reaches to the very centre of the sun and planets, without any diminution of its force, and it acts not proportionally to the surfaces of the particles it acts upon, as mechanical causes use to do, but proportionally to the quantity of solid matter. And its action reaches every way to immense distances, decreasing always in a duplicate ratio of the distances. But the cause of these properties of gravity, I have not yet found deducible from the phenomena, and hypotheses I frame not.

We have selected these passages from the works of Newton, because, taken together, they furnish sufficiently clear and exact ideas about the signification of those terms whose explanation we have attempted. First, the cause or great operating principle of gravity whose influence pervades the whole system, reaching to the very centre of the planets and the sun, he acknowledges to be unknown, not yet appearing to him to be deducible from the phenomena. Next, the laws of gravitation, or the rules by which the unknown principle operates, he considers as ascertained by observation and just inference of reason; and lastly the facts or phenomena themselves are the tendencies of all bodies around the earth to its centre, and the motions of the heavenly bodies. These are precisely the views of these matters which we have endeavoured to establish. The opinions of Bacon, Des Cartes, and unnumbered other philosophers might easily be shown to correspond with these,

CHAPTER IV.

The opinions of Mr. Hume on Cause and Effect.

SUCH a full and elaborate explanation of terms, in themselves simple and intelligible, would have been unnecessary, had they not been rendered ambiguous and confused in their signification by some writers of a more recent date than the authors before referred to. That writers, whose evident aim is, to treat every received maxim in science as a professed enemy, with whom they are to wage hostility, and who, in the prosecution of this warfare, would unsettle the foundations, not only of religious and moral, but even of philosophical and mathematical truth, and conduct the understandings of mankind to universal scepticism, and even a blank atheism, should adopt as one of the expedients, by which to accomplish their purpose, a doubtful and cloudy application of terms; sometimes, taking them as expressive of one combination of ideas, and, at other times, of another; at one time, using them according to ordinary acceptation, at another, in a meaning variant from the authorised usage of the language, was to have been anticipated. Accordingly we find Mr. Hume, in his treatise of human nature, giving the following account of cause and effect, as far as his opinion is to be collected from the affected obscurity of his style, and the studied intricacy and involution in his modes of thinking. He divides all our perceptions into impressions and ideas, the latter being regarded merely as the faint images or copies of the former; and to this arbitrary division of our perceptions, alike unknown to the schools and to nature, he adverts in laying the foundation of his doctrine about causation. "To begin regularly," says he, "we must consider the idea of causation, and see from what origin it is derived. 'Tis impossible to reason justly without understanding perfectly the idea concerning

which we reason; and 'tis impossible perfectly to understand any idea without tracing it up to its origin, and examining that primary impression from which it arises. Let us, therefore, cast our eyes on any two objects which we call cause and effect, and turn them on all sides in order to find that impression which produces an idea of such prodigious consequence." He maintains that, with the most diligent search, he can discover no previous impression, from which the idea of efficiency or necessary connection between causes and effects can be derived, and that the relation of contiguity and constant conjunction are all that are essential to causation. But lest it should be asserted that our having a distinct idea of force, power or efficiency in one object to produce an effect upon another, shows that we have some ideas which have not been preceded by their correspondent impression, and overthrows his theory of perception, instead of his theory overturning the doctrine of causation; he proceeds to the discussion of the two following propositions. "First, for what reason we pronounce it necessary, that every thing whose existence has a beginning, should also have a cause? Secondly, why we conclude that such particular causes must necessarily have such particular effects?" In reference to that maxim so generally received in philosophy, that whatever begins to exist must have a cause of its existence, it is neither intuitively nor demonstrably certain. And since it is not from knowledge or scientific reasoning, that we derive the opinion of the necessity of a cause to every new production, that opinion must necessarily arise from experience and observation. Now the nature of experience is this. We remember to have had frequent instances of the existence of one species of objects; and also remember that the individuals of another species of objects have always attended them, and have existed in regular order of contiguity and succession in regard to them. Thus we remember to have seen that species of objects we call flame, and to have felt that

species of sensation we call heat. We likewise call to mind their constant conjunction in all past instances. Without any further ceremony we call the one cause and the other effect, and infer the existence of the one from that of the other. In giving a solution of the second question, viz. why we conclude that such particular causes must have such particular effects, he maintains; "that if it be allowed for a moment, that the production of one object by another in any one instance implies a power, and that this power is connected with the effect, we have no reason to infer that the same power still exists merely upon the appearance of the sensible qualities. The appeal to past experience decides nothing; and at the very utmost can only prove that that very object which produced any other, was at that very instant, endowed with such a power, but can never prove that the same power must continue in the same object or collection of sensible qualities; much less that a like power is always conjoined to such sensible qualities. Thus," he concludes, "not only our reason fails us in the discovery of the ultimate connexion between causes and effects; but even after experience has informed us of their constant conjunction; 'tis impossible for us to satisfy ourselves by our reason why we should extend that experience beyond those particular instances which have fallen under our observation."

The passages before extracted from Locke, Newton and Cicero, when compared to these from Mr. Hume upon the same subject, furnish us with a tolerably just conception of the difference between that clear and intense light which is shed around the investigations of the true philosopher, of him who exerts himself to the utmost to become, in sincerity and truth, the faithful interpreter of nature; and those faint and false fires which cast a dubious and deceptive glimmering along the footsteps of those who would sedulously, and with full purpose of mischief, lead us astray from the paths of truth and right reason. Is there any one who is in the smal-

lest degree versed in the science of nature, and accustomed to trace his ideas to their origin, or compare and combine them, who would seriously maintain that our ideas of the relation of cause and effect, and of the contiguity and conjunction of objects are the same? The veriest tyro in metaphysics could detect a fallacy of this kind. The mere contiguity and conjunction of those objects existing in nature, without conceiving of them as possessed of powers and actually exercising those powers, would not afford even a plausible account of those numberless changes and modifications both bodies and minds are perpetually undergoing, and the endless diversity of forms they are successively assuming. If contiguity and constant conjunction form the only bond of connexion between cause and effect, then, there is no one thing in nature which may not be the cause of any other. Heat may be the cause of cold, and cold of heat, health may be the cause of sickness, and sickness of health, rain may be the cause of sunshine, and sunshine of rain, winter of summer, and summer of winter. I open the lids of my eyes during the day and I perceive the objects around me; I unfold the shutters of window and my room is illuminated. Now, in both these cases, the one event immediately succeeds the other, and is constantly conjoined to it. But is the act of opening my eye-lids the cause of my seeing, or the unfolding of the shutters of my window the cause of the illumination of my room? Scarcely any one can be so little skilled in tracing the operations of nature as to be imposed upon by so palpable a sophism. Take the example furnished us by Mr. Hume himself. "We remember to have seen that species of objects which we call flame, and to have felt that species of sensation, which we call heat. We likewise call to mind their constant conjunction in all past instances. Without further ceremony we call the one cause and the other effect." We may leave it to the judgment of any man of sound understanding, however little accustomed to metaphysical spe-

culations, to decide whether this be a just interpretation of nature. Besides the contiguity and constant conjunction of heat as a quality in fire and of our sensation, do we not become sensible that there is a force or power in the fire to produce that sensation? We never approach the fire, but our lungs are at the same time, inflated with air and we breathe, the blood is propelled through the arteries and our pulse beats. These acts of breathing through the lungs and the pulsations of the heart are events as constantly conjoined to that of our approaching the fire as our sensation of heat; and yet is the heat in the fire the cause of our breathing or of the pulsations of the heart? In what, then, it may be asked, consists the difference between the relation which our sensation of heat bears to that quality in fire which excites that sensation, and that which the same quality in fire bears to our breathing through the lungs and the pulsations of our arteries? It is evident, that the difference does not consist in the greater or less degrees of contiguity and conjunction of those objects, as they are equally contiguous and conjoined to each other. The matter can be solved only by admitting that in the one case, we are sensible of a power residing in the fire which operates upon our sense and produces its results; in the other case we are sensible of no such power or operation. Instances without number might be adduced, that fall under every person's daily experience, in which objects are found to be contiguous and conjoined to each other, precedent and sequent, without making the smallest approximation towards that union which is denoted by the expressions, cause and effect. In fact, if Mr. Hume's representation of this matter be correct, the pursuits of the philosopher are greatly abridged, and his irksome and laborious exertions in the prosecution of his discoveries utterly superseded. If instead of striving with the ancient Peripateticks to attain to a knowledge of causes, properly so called, or with Newton to arrive at a solution of the phenomena of nature, by referring them to such

causes as are both true and sufficient to explain them; in a word, if instead of exerting himself to the utmost with the soundest and best investigators both of an ancient and modern times, to remove the awful veil from nature, and disclose to the pupils of science her venerable mysteries; his task be limited to tracing the contiguities and conjunctions of objects, their antecedences and sequences, it might, indeed, be rendered more practicable and easy; but at the same time would become in the highest degree frivolous and futile. What could be more easy than to trace a thousand contiguities and conjunctions of objects, what more difficult than by a complete induction, to ascend upon the modern plan of philosophising to efficient causes and general maxims of science? It is worthy of remark, indeed, that there is a summary mode of philosophising, or compendious method of explaining the appearances of nature, prevalent among the vulgar, which is not unlike that recommended by him, whom Dr. Reid and his contemporaries of the same school of metaphysics, so often mention as one of the acutest metaphysicians that ever lived. Minds undisciplined to thinking and inquiry, and untutored in the science of nature, appear to have a natural propensity to regard events which merely precede or succeed each other, in the light of causes and effects; as when an eclipse of the sun or moon is thought, by the vulgar, to occasion the changes that ensue in the state of the atmosphere, or itself to have arisen from the vices of men, the approach of a comet to be the cause of pestilential influences. *Non causa pro causa*, is a very ordinary vulgar sophism. Whenever such appearances among the heavenly bodies have been found in conjunction with such changes and influences upon earth, although these phenomena may be casual coincidences, events purely contingent and unconnected with each other in the order of nature, the vulgar imagination immediately assigns to them a real connection, and considers them as bearing towards each other the relation of

cause and effect. In fine, the same mode of reasoning pursued by Mr. Hume, when extended to those limits to which it inevitably leads, however reluctant he might have felt to trace it to such consequences, would give the sanction of philosophy to the wildest reveries of folly and imposture, and the most extravagant freaks of ignorance and superstition. When the judicial astrologer pretends to foretell the future fortunes of men from the relative positions of the heavenly bodies at the period of their nativity—when the Roman Soothsayers and Augurs undertook to predict the fate of armies and empires, from the pecking of fowls, the flight of birds and the entrails of victims; when the votary of superstition performed a toilsome journey to the tomb of his tutelary saint, and waited with unwearied patience expecting to be healed of his diseases by the heavenly influence supposed to be shed from his ashes: what did all these dupes of ignorance and credulity, but rest their conclusions, and support their visionary hopes, upon the foundation laid for them by Mr. Hume? Men born at certain conjunctions and oppositions of the heavenly bodies, had been found to be partakers of peculiar fortunes. Certain appearances in the pecking of fowls, the flight of birds, and the entrails of victims, had been succeeded by prosperous or disastrous circumstances to armies and empires; devotion at the tombs of saints had been attended, on some occasions, with the cure of diseases. Hence from the contiguities and conjunctions between these events, their antecedences and sequences, the astrologer, the soothsayer, and the votary of superstition, supposed himself justified in considering them as assuming towards each other the relation of cause and effect. So nearly do the extremes in the principles of scepticism and atheism approach to those of ignorance and superstition! And thus does he, who thought himself one of the ablest and most successful enemies of superstition, unwarily establish maxims that lead to its support and encouragement!

But we have objections of a much more serious nature to bring against the principles of Mr. Hume. They lead by inevitable consequence to the rankest atheism. For, if as he asserts, we have no idea of power or efficiency in causes to produce their effects, there being no previous impression to which that idea can be traced; and if moreover, we have no reason to believe, either from intuition, demonstration or experience, that there is any efficiency in any one thing to produce another; and, still farther, if when any effect is exhibited to us there be no good ground to conclude that there must have been a cause, there being no truth in the maxim, that whatever begins to exist must have a cause; the very foundation of the argument by which the existence of a God is proved is sapped and destroyed. And yet we find the learned and judicious Dr. Reid, in animadverting upon these opinions of Mr. Hume, speaking in the following style. "If, on the other hand, our belief that every thing that begins to exist has a cause, be got only by experience: and if, as Mr. Hume maintains, the only notion of a cause be something prior to the effect, which experience has shewn to be constantly conjoined with such effect, I see not how from these principles it is possible to prove the existence of an intelligent cause of the universe." This must be allowed to be very mild and courteous treatment of a man who had the impudence and the hardihood to broach such abominable doctrines. The Dr. need not have discovered any solicitude to relieve the principles of Mr. Hume from the charge of leading to the exclusion of an intelligent cause of all things, as he seems not to have been liable on that score to any such, compunctions visitings of nature for himself. Not only is it true, that from the principles of Mr. Hume, it is impossible to prove the existence of an intelligent cause of the universe; but it is moreover, perfectly certain, that, advancing upon the ground of such doctrines, we are led at once precipitately and unavoidably into the gulf of atheism. How much so-

ever we may be inclined to approve of that christian temper and moderation which would induce us, like a Campbell, a Watson, and a Hooker, to treat a literary antagonist with candour and liberality, and to oppose even the most pernicious errors in a spirit of meekness and forbearance; it may be made a question, when the great and fundamental interests of truth and mankind are at stake, whether it is not at once more compatible with true sincerity and zeal in their cause, and more likely to terminate in a favourable result; instead of meeting the adversaries of truth and righteousness with such softened phrase of overacted courtesy, to assume the severe countenance and stern reproof of a Beattie, what Mr. Hume himself denominates "the arrogance and scurrility" of the Warburtonian school, or even the intrepid invective of "slashing Bentley with his desperate hook." It is scarcely to be conceived as consistent with a hearty zeal in the cause of truth and virtue, to treat their worst enemies with so much respect and tenderness. We would not raise the Tomahawk against a literary adversary, or kindle around him the fires of the stake; but, according to all the laws of the most civilized warfare, we must be allowed to resort to the use of those weapons the best suited to the nature of the contest, and the most likely to produce a favourable issue. Atheism is a monster not to be tamed or subdued by gentleness and coaxing. But this is not all that we have to reprehend in the treatment which Dr. Reid has given to Mr. Hume's doctrine. Not only in no part of his voluminous writings on these subjects, has he spoken in terms of such decided reprobation as the case required, but on some occasions we find him capable of offering a direct apology for it. "The common theory," says he, "that all our ideas are ideas of sensation and reflection, and that all our belief is a perception of the agreement or disagreement of those ideas, appears to be repugnant both to the idea of an efficient cause and the belief of its necessity. An attachment to that theory,

has led some Philosophers to deny that we have any conception of an efficient cause or of active power, because efficiency and active power are not ideas either of sensation or reflection. They maintain, therefore, that a cause is only something prior to the effect and constantly conjoined with it. This is Mr. Hume's notion of a cause.

Here we find that hideous monster atheism traced to the door of Mr. Locke and the philosophers; but we shall show during the progress of these dissertations that it is the genuine offspring of Mr. Hume himself. This is not the only time in which in the writings of Dr. Reid, the errors of Mr. Hume and others are laid to the account of the great english metaphysician. Dr. Reid had before indicated his doubts whether our belief that every thing which begins to exist has a cause be gotten only by experience, and he now peremptorily asserts, "that the common theory that all our ideas are ideas of sensation and reflection, and that all our belief is a perception of the agreement or disagreement of these ideas, appears to be repugnant to the idea of an efficient cause and a belief in its necessity." From these and other expressions more directly in point, it appears that Dr. Reid did not think that our idea of cause and effect is derived from experience, or through the channel either of sensation or reflection; and he undoubtedly would not be willing to admit any doctrine which is repugnant to the idea of an efficient cause and a belief in its necessity. And yet it is a little singular that the Dr. in a very few sentences before, in attempting to trace to its origin our idea of cause and effect, or active power, seems inadvertently to have been betrayed into the theory of Mr. Locke. "It is very probable," says he, "that the very conception or idea of active power and efficient causes, is derived from our voluntary exertions in producing effects, and that if we were not conscious of such exertions, we should have no conception at all of a cause or ac-

tive power, and consequently no conviction of the necessity of a cause to every change which we observe in nature.*

By adverting to the portion of Mr. Locke's treatise before quoted in part, the reader will find that the author derives our idea of power, and of cause and effect also, both from sensation and reflection, from our observation of the operations of bodies upon each other, and also the operations of our own minds. Now, what does Dr. Reid, in this passage but refer the same idea to the origin of reflection or consciousness, excluding sensation from all share in producing it? But after all that has been said on this subject, we can perceive no good reason for impugning the opinion of Mr. Locke, that we derive our idea of cause and effect, power and active power, as well from witnessing the changes and alterations which outward objects produce on each other, as from the operations of our own minds, and our voluntary exertions in producing effects.—Let us now return to the doctrine of Mr. Hume. Dr. Reid asserts, that an attachment to the common theory, that all our ideas are ideas of sensation or reflection, and all our belief a perception of the agreement or disagreement between these ideas, led Mr. Hume to deny that we have any conception of an efficient cause. But the Dr. should have recollected that a man, in commencing sceptick, as soon as he is initiated into the mysteries of that fraternity, finds it imposed as one of the strictest rules of his order, to discard his attachment to all theories whatever. Like Ishmael, his hand should be against every man, convinced that every man's hand is against him. He should believe in nothing but that nothing is worthy of belief, oppose with his utmost strength all those truths which others have been in the habit of considering as established and consecrated, and discover a leaning towards all that by others are regarded as questionable or absurd, exploded or offensive, hazard any doctrines or arguments that suit his purpose, at

*See *Essay fourth, upon cause and effect*, page, 409. vol. 2.

the time, without fear of being detected in any inconsistencies with himself, since this circumstance would not defeat or mar his great design, and whenever he finds himself at a loss for sufficient proofs to lead to his conclusions, involve the whole subject in a cloud of subtilty and confusion, and escape to his inferences, unobserved through the darkness. In all these qualifications of an able sceptick we think Mr. Hume an admirable proficient. He certainly was not led into his sceptical and atheistical principles from his attachment to the theory of Mr. Locke and the philosophers, since he found no better ground in that theory on which to erect his system, if it may be called such, than in the doctrines of those metaphysicians who have succeeded them. And after a tolerably careful perusal of his works, we profess ourselves unable to discover in him a fondness for any one truth or system throughout the whole circle of the sciences.—In fact as a professed Pyrrhonist, this would have been inconsistent with his plan, which is not to construct systems, but to limit his views solely to the subversion of the systems of others. It is true that in the commencement of his treatise upon cause and effect, he adverts to a distinction made by himself among our perceptions, in which, without any authority from the schools or from nature herself, he divides them into impressions and ideas, considering the first as our original perceptions, and the second as the mere copies or images of these. So far, however, is he from following Mr. Locke in this arbitrary division, that he expressly asserts, that in this manner he restores the term idea to its original signification, from which it had been perverted by Mr. Locke, when he makes ideas include all our perceptions. It is true, moreover, that Mr. Hume makes use of this arbitrary division of our perceptions, into impressions and ideas, as the first step in his progress towards overturning the doctrine of causation, and that he seems to think it a very convenient instrument for the purpose, since he professes that, with the most

diligent search, he cannot find any previous impression to which the idea of power or efficiency is to be referred and of which it is the image or copy. Others, perhaps, might think themselves a little more fortunate in this search, and without laying claims to uncommon perspicacity, might imagine that even upon his own principles, considering the term impressions as equivalent to that of our original perceptions, an impression or original perception might be found to which the idea of power might be traced. It is worthy of remark, however, that while Mr. Hume does endeavour to subvert the doctrine of causation by attempting to show that there is no impression to which the idea of power or efficiency can be traced, yet he does not rest upon this point the main stress of his argument.—The foundation of his atheism is much deeper. Perceiving that it would be very justly alleged against him, that the very circumstance of his being able to reason on the subject, and speak intelligibly about power, cause, and effect, was decisive proof of his having ideas of them, since he could not argue about any thing of which he had no idea; and of consequence, that if according to his views there were no previous impressions, to which those ideas, which it must be allowed he possessed, could be referred, this went to overturn his theory, since it showed that we had some ideas which could not be found to originate in or be copied from any previous impressions, instead of his theory subverting the doctrine of causation; he very adroitly shifts the subject, and merges this question in the discussion of two interesting points: first, for what reason we pronounce it necessary that every thing whose existence has a beginning should also have a cause? Secondly, why we conclude that such particular causes must necessarily have such particular effects? This, it must be admitted, discovers all the management and subtilty of an able sceptick; but at the same time it justifies us in the assertion, that the doctrines of Mr. Hume, so far from having sprung out of the theory of Mr. Locke, or any of the philosophers who lived

before his time, is as much at variance with it as with any system that has been or ever can be broached on this subject.

As it will naturally fall in our way, at a future period of this discussion, to prove that our ideas of power, active power, cause and effect may be derived from sensation and reflection, notwithstanding all that Dr. Reid and Mr. Hume have alleged to the contrary; and to show in what manner we arrive at the very important conclusion that every effect must have a cause, we dismiss the subject at present with remarking that the doctrines before stated as held by Mr. Hume, not only lead by inevitable consequence to atheism, but tend also to invalidate, and utterly to destroy, the force of the method of reasoning from induction, upon which all natural and experimental science is founded. "Supposing," says he, "that the production of any one object by another, in any one instance, implies a power, and that this power is connected with the effect, we have no reason to infer that the same power still exists, from the appearance of the same sensible qualities. The appeal to past experience decides nothing; and at the very utmost can only prove, that that very object which produced any other, was at that very instant endowed with such a power, but can never prove that the same power must continue in the same object or collection of sensible qualities, much less that a like power is always conjoined to such sensible qualities. Thus," he concludes, "not only our reason fails us, in the discovery of the intimate connection, between causes and effects, but even after experience has informed us of their constant conjunction, 'tis impossible for us to satisfy ourselves by our reason why we should extend that experience beyond those particular instances which have fallen under our observation."

Thus, while with one hand, he would strike away the foundation upon which rests the proof of the existence of God, with the other he would overthrow the certainty of all

those sciences which consist, to use the language of Lord Bacon, in the interpretation of nature. All those sciences rest the certainty of their principles upon the ground of the stability of the constitution, and order of nature, and upon the uniformity and permanence of her laws; while Mr. Hume informs us that we have no reason to draw any inference from our own experience concerning the past or future. If this part of Mr. Hume's doctrine be true, we have no reason to conclude, because we have ascertained by a just induction that the united influence of the Sun and Moon occasions the ebbing and flowing of the tides to-day, that the same influence will produce that result to-morrow; because bodies now gravitate towards the earth, and the Planets towards the Sun, they will do so in future; in a word, because the Sun rises and sets to-day, and has always risen and set every twenty-four hours, since the Creation, it will rise and set to-morrow. Into such extravagancies and absurdities are men driven by the wanton spirit of scepticism. And yet this frivolous, and flimsy disquisition has been dignified with the title of profound reasoning, and acute metaphysicks. It forms a part of the task we have assigned ourselves to detect its fallacy, and exhibit the force and certainty of that part of our knowledge which rests upon experience or the inductive method of reasoning. We proceed, therefore, without further delay to the opinions of the remaining authors upon the subject of cause and effect.

CHAPTER V.

The opinions of other authors upon Cause and Effect.

Dr. Priestley, in speaking upon the subject of cause and effect, says, "a cause cannot be defined to be any thing but such previous circumstances as are constantly followed by a certain effect, the constancy of the results making us conclude that there must be a sufficient reason in the nature of the things why it should be produced in those circumstances." If by the expression, sufficient reason in the nature of the thing, be meant, as no doubt is meant, a power or efficiency in the cause to produce such results, we see no room for objection against this definition, but that it is couched in language rather inaccurate, when previous circumstances are placed in the same category with thing or cause, and that it does not furnish an example in which that author has expressed himself with his usual perspicuity and precision of style.

Mr. Hume's doctrine appears to have shed a baneful influence upon the Scottish school of metaphysicks, most of the writers of that school discovering in their productions some tincture of his opinions. Whether it be that Dr. Reid, from frequent perusal of the works of that celebrated sceptick, and from that admiration of his genius which he takes frequent opportunities to display, even while combatting his errors, was at first drawn insensibly into the vortex of that influence which the principles of Mr. Hume evidently obtained in his native country; or whether the Dr. in his earlier productions, had not as yet, (as he acknowledges to have been the case in reference to the immaterialism of Bishop Berkeley) seen those ulterior consequences that result from them, certain it is, that in his treatise upon the human mind, the

first and most crude of his publications, he has not only adopted some of the opinions but the very language of Mr. Hume, relative to cause and effect.* “What we call natural causes,” says he, “might with more propriety be called natural signs; and what we call effects, the things signified. The causes have no proper efficiency or causality, as far as we know: and all that we can certainly affirm, is, that nature hath established a constant conjunction between them and the things called their effects, and hath given to mankind a disposition to observe their connections, to confide in their continuance, and to make use of them for the improvement of our knowledge and increase of our power.” Again he expresses himself to the same purport. “† For effects and causes in the operations of nature mean nothing but signs and the things signified by them; we perceive no proper causality or efficiency in any natural cause, but only a connection established by the course of nature between it and what is called its effect.” This, it will be perceived is precisely the language of Mr. Hume, and as far as the structure and operations of the physical world are concerned, to all intents and purposes, his doctrine. But how are we to reconcile these views of this matter to the following passage, as well as others which will be afterwards adduced.‡ “The chain of natural causes,” says Dr. Reid, “has not unfitly been compared to a chain hanging down from Heaven; a link that is discovered supports the link below it, but it must itself be supported; and that which supports it must itself be supported, until we come to the first link which is supported by the throne of the Almighty. For every natural cause must have a cause until we ascend to the first cause which is uncaused and operates not by necessity, but by will.” Professor Stewart has remarked an inconsistency between this and

* Chap. 5. sect. third. Inquiry concerning the human mind.

† See chap. 6. sect 24. Inquiry concerning the human mind.

‡ See Essay 2. chap. 6. vol. 1. Intellectual and active powers.

the language previously and subsequently held by the same writer, although unfortunately for the discernment and reputation of that author, as we shall see afterwards, he has stopped short in the crude and less digested opinions of his master and repudiated the more sound conclusions into which he was occasionally drawn by the force of truth.* “It is difficult to reconcile the approbation here bestowed on the above similitude,” says he, “with the excellent and profound remarks on the relation of cause and effect, which occur in other parts of Dr. Reid’s works.” But we affirm that it is not only difficult to reconcile the doctrine taught in the one case, when it said that causes and effects, imply nothing more than signs and the things signified by them, and that causes, as far as we know, possess no proper causality or efficiency; with that which is alleged in the other case, when the connection between natural causes and effects, is compared to a chain hanging down from Heaven; and when it is said that every natural cause, must have a cause; but that the two representations of the subject are in direct and irreconcilable contradiction to each other. For, if according to the above representation, between any one effect in the natural world and the Creator there be any chain of causes or any single cause forming a link in that chain, that cause must contain within itself a power or efficiency to produce that effect, upon the principles of the Dr. himself, who again and again, declares, what all but atheists admit, that for every effect in nature there must be an adequate or efficient cause. The Supreme Being must either be the immediate operating cause of every event in the physical world, or he must communicate to those natural causes intervening between him and the effects, a force, power, or efficacy, adequate to produce those effects. Thus is it evident that the Dr. in one part of his works, maintains a doctrine in direct hostility to that which is held in another.

* See note N. to vol. 2. On philosophy of the human mind.

But let us contemplate this matter in another light. We are told that what we call natural causes, might with more propriety be called natural signs, and what we call effects the things signified. Let us put this mode of speaking to the test, and see what advantage to philosophy is likely to accrue from the change of phraseology. When wax is melted in the sun, according to ordinary methods of speech, heat in the sun's rays is said to be the cause, and the efficient cause too, and the melting of the wax, is called the effect; but we are told by our philosopher, that the heat would with more propriety be denominated the sign, and the melting of the wax the thing signified. In like manner when lightning rends the oak, the electrick fluid is the sign, and the rending of the oak the thing signified. This phraseology approaches so nearly to the jargon of the schools, and is so little comprehensible, that in despair of obtaining any instruction from such a representation of things or penetrating into the motives that led to the proposal for such a change of language, we set ourselves forward in quest of an explanation, and to our utter astonishment we find that this mode of expression is attempted to be justified by the authority of Lord Bacon, who denominates the true method of investigating nature, that method in which after a full and complete collection of facts, we ascend to the great maxims of science, an interpretation of nature, which is regarded as equivalent to the expressions interpretation of signs. "The great lord Verulam," says the Dr. "had a perfect comprehension of this, when he called it an interpretation of nature."* Strange that a beautifully figurative expression should have been so egregiously misunderstood and so grossly perverted.

But to return to our subject. We are informed that natural causes have "no proper causality or efficiency in them, as far as we know, and that all we can certainly affirm, is, that nature hath established a constant conjunction between

* See chap. 5. sect. third. On the human mind.

them and the things called their effects." And yet afterwards we find Dr. Reid reprehending Mr. Hume for uttering the same language and inculcating the same doctrine, to which in this and other parts of his essays he gives his decided sanction, "Mr. Hume," says he, "maintains that the only notion of a cause is something prior to the effect, which experience has shown to be constantly conjoined to it. He seems to reason justly from his definition of a cause when he maintains that any thing may be the cause of any thing, since priority and constant conjunction are all that can be conceived in the notion of a cause." Now, in what does Mr. Hume's account of a cause differ from that which Dr. Reid has given in the passages before quoted from him, in which he boldly asserts that "there is no proper causality or efficiency in any cause, as far as we know, and that all we can certainly affirm, is, that nature hath established a constant conjunction between them and the things called their effects?"

I am aware, that it may be answered, and justly too, that Dr. Reid meant this doctrine as propounded by him to apply solely to the events of the natural world, and had no relation to what are properly denominated efficient causes, in which the energies of mind are always presupposed to be exerted. Although this explanation would not relieve his doctrine from the charge of inconsistency which has been shown to lie against it, as expounded by him, yet the question may then be asked, why not qualify his reprehension of Mr. Hume, and show that his doctrine was only partly true, but could not be supported in the extent to which he wished to apply it? This would have been but fair and honourable dealing, and commendable conduct even towards a sceptick and atheist.

The fact is, that what we have to complain of in the works of Dr. Reid, is, not that they do not contain a considerable portion of sound learning, judicious observations and occa-

sionally profound reflections; but that he has not been sufficiently attentive to systematise his ideas and digest and condense his views. Essay after essay is poured out upon us, in which the same subject is recurred to, the same things repeated, and when we supposed that we had fully ascertained the opinions of the author, some additional speculations are indulged that again throw us back into total darkness as to his opinions and put our understandings to the utmost test to reconcile them with what he had previously taught. Upon the point now under discussion of cause and effect, I have to regret that after a diligent perusal of the several portions of his works which bear relation to it, which are, as usual, very numerous and prolix, I am unable to discover that clearness of conception, coherence and consistency of views and luminous exposition of doctrine, which so eminently distinguish the writings of Locke, Clarke, Des Cartes and Mallebranche, those lights of moral science. In order to let each author speak for himself, I am compelled to fill these pages with more frequent and detailed quotations than I could have desired. This, however, is an evil which is unavoidable, if we wish to ascertain with accuracy the progress which the science of the human mind has already made, to arrive at any definite conclusions in it, or that it should be cultivated with success in future, and make any further advances towards that perfection which has been attained in natural philosophy.

In Dr. Reid's essays upon the "intellectual and active powers," he undertakes to illustrate what is meant by giving a solution of any phenomenon in nature. After remarking that it is a dictate of common sense, that the causes which we assign of appearances should be both true and sufficient to explain them, (and by the by, why should we talk of causes being sufficient to explain appearances, if as this author we have seen maintains there be no proper efficiency or sufficiency in them, but they are to be regarded merely as

signs) he proceeds—"That those who are less accustomed to inquiries into the causes of natural appearances, may better understand what it is to show the cause of such appearances or to account for them; I shall borrow a plain instance of a phenomenon or appearance, of which a full and satisfactory account has been given—The phenomenon is this: That a stone or heavy body, falling from a height, continually increases its velocity as it descends; so that if it acquire a certain velocity in one second of time, it will have twice that velocity at the end of two seconds, and so on in proportion to the time. This accelerated velocity in the stone falling, must have been observed from the beginning of the world, but the first person, as far as we know, who accounted for it in a philosophical manner, was the famous Gallileo, after innumerable false and fictitious accounts had been given of it. He observed that bodies once put in motion, continued that motion with the same velocity and in the same direction until they be stopped or retarded, or have the direction of their motion altered by some force impressed upon them. He observed also, that gravity acts constantly and equally upon a body, and therefore, will give equal degrees of velocity to a body in equal times. From these principles which are known from experience to be fixed laws of nature, Gallileo showed that heavy bodies must descend with a velocity uniformly accelerated as by experience they are found to do.

We may here observe that the causes assigned of this phenomenon are two; first that bodies once put in motion retain their velocity and their direction until they are changed by some force impressed upon them; secondly, that the weight or gravitation of a body is always the same. These are laws of nature, confirmed by universal experience, and therefore are not feigned but true causes—then they are precisely adequate to the effect ascribed to them; they must necessarily produce that very motion in descending bodies which we find

to take place, and neither more nor less. The account, therefore, given of the phenomenon is just and philosophical."

It ought likewise, to be observed, proceeds the Dr., that the causes assigned of this phenomenon, are things of which we can assign no cause. Why bodies once put in motion continue to move; why bodies constantly gravitate towards the earth with the same force, no man has been able to show. These are facts confirmed by universal experience, and they must no doubt have a cause, but their cause is unknown, and we call them laws of nature, because we know no cause of them, but the will of the Supreme Being.

But may we not attempt to find the cause of gravitation, and of other phenomena which we call laws of nature? No doubt we may.—We know not the limit which has been set to human knowledge, and our knowledge of the works of God can never be carried too far. But supposing gravitation to be accounted for by an ethereal elastic medium, for instance, this can only be done by proving the existence and elasticity of this medium, and secondly, by showing that this medium must necessarily produce that gravitation, which bodies are known to have; until this be done gravitation is not accounted for, nor is its cause known. The chain of natural causes has not unfitly been compared "to a chain hanging down from heaven, &c."*

This account of the solution of a phenomenon in nature is, in substance, correct, and given upon those principles which we wish to establish; but at the same time, it must be admitted altogether inconsistent with the doctrine previously and subsequently held by the same author. What we have to complain of in this passage is not the doctrine attempted to be inculcated, but the very vague and confused use of terms. In one place, he says, the causes assigned for this phenomenon are laws of nature confirmed by universal experience,

* See Essay 2. ch. 6. Intellectual and active power.

and therefore not feigned but true causes. In another, these are facts confirmed by universal experience and we call them laws of nature, because we know no cause of them. Here what were before denominated causes and laws of nature, are now denominated facts. Again: May we not attempt to find the cause of gravitation and of other phenomena which we call laws of nature. Here laws of nature before called causes and facts are represented to be phenomena. Do the terms, then, cause, facts, phenomena, and laws of nature, all signify the same thing? Is there any prospect of our arriving at any thing like a just philosophy, until we learn more precisely and accurately to affix steady significations to our terms? Upon the principles before laid down, the account of the solution furnished by Gallileo of that phenomenon in nature is extremely simple and intelligible. The accelerated motion of falling bodies when perceived by the spectator is the fact, appearance, effect or phenomenon. Gallileo sets himself to work to afford a solution of it. He soon finds that it must be referred to the operation of that great principle, cause, or agent which occasions attraction, and which is admitted to be unknown. The object of his next inquiry is to determine the law or laws by which this principle acts upon falling bodies. Upon examining the matter, he discovers, that from that known property of bodies, their vis inertię, it necessarily results that when once put into motion, they must retain their velocity and direction until these are changed by some other force impressed upon them. He discovers also from experience and observation, that the unknown cause which occasions the gravitation of bodies acts upon them with the same force at different distances. From these two premises, derived from the known properties of dead matter and the principle which occasions attraction, he deduces the inference with satisfactory force of argument, that bodies must descend to the earth with velocities uniformly accelerated. This is undoubtedly a satisfactory so-

lution of the phenomenon as far as science has yet been able to solve it; in as much as it has been referred to the operation of a cause acknowledged to be both true and sufficient to explain it, and the law under which that cause operates has been ascertained. I say as far as science has yet been able to explain it, because there is yet one link in the chain acknowledged to be undiscovered, the cause of the attraction or gravitation of bodies. A phenomenon, therefore, I take it, may be said to be completely explained when it is traced back to its cause, and the law under which that cause acted in producing it, is ascertained. It is partially explained, although it may be sufficiently for all practical purposes, when the cause has been developed, although the law under which it acts remains unknown, or when the laws of its action have been unfolded, though the cause remains unknown.

But if we have to complain of Dr. Reid's ambiguous and undistinguishing use of his words, what shall we say of those inconsistencies with himself, which may be shown by comparing his different productions upon this subject with each other? Take the following examples:—In a paragraph before taken from him, he says, “these are laws of nature confirmed by universal experience, and therefore, are not feigned but true causes.” To the same purport he asserts in his essay upon efficient causes,* “Natural philosophers who think accurately, have a precise meaning to the terms they use in the science; and when they pretend to show the cause of any phenomenon in nature, they mean by the cause a law of nature, of which that phenomenon is a necessary consequence.” Oppose to these passages the following written by the same author on the ambiguity of words, †In compliance with custom, or perhaps to gratify the avidity of knowing the causes of things, we call the laws of nature, causes and active

* Essay 1, ch. 6, vol. 2. Intellectual and active powers.

† See Essay 4, ch. 3, vol. 2. Intellectual and active powers.

powers. So we speak of the powers of gravitation, of magnetism, of electricity. We call them causes of many of the phenomena of nature; and such they are esteemed by the ignorant and half-learned. But those of juster discernment see that laws of nature are not agents. They are not endowed with active power, and therefore cannot be causes in the proper sense. They are only the rules according to which the unknown cause acts." First, we see that laws of nature are represented to be not feigned but true and adequate causes; next, laws of nature are supposed only to be causes, but cannot be such as they are not agents or endowed with active power. They are only the rules according to which the unknown cause acts. Again—"Natural philosophers who think accurately have a precise meaning to the terms they use in the science, and they mean by the word cause a law of nature of which a phenomenon is a necessary consequence;" at the next moment we are told that "the laws of nature are esteemed causes only by the ignorant and half-learned, but those of juster discernment perceive that they are not." Nor is this all. In one place the question is asked, "may we not attempt to find the cause of gravitation or of other phenomena which we call laws of nature?" The answer is, no doubt we may. We know not the limit which has been set to human knowledge, and our knowledge of the works of God can never be carried too far. The chain of natural causes has not unfitly been compared to a "chain hanging down from heaven. Every natural cause must have a cause, until we ascend to the first cause which is uncaused and operates not by necessity but by will." In another passage are contained these sentiments. "Those philosophers who have had the justest views of things as well as the weakness of human understanding, giving up the pretence of discovering the causes of the operations of nature, have applied themselves to discover by observation and experiment, the rules or laws of nature according to which the phenomena of na-

ture are produced." And again—"We deceive ourselves, if we conceive that we can point out the real efficient cause of any one phenomenon in nature." First, we are told that we may attempt to find the cause of gravitation or of any other phenomena, since we know not the limit which is set to the human mind, and our knowledge of the works of the Creator cannot be carried too far, and every natural cause must have a cause until we ascend to the first cause: At the next moment, we are informed "that we deceive ourselves, if we suppose that we can point out the real efficient cause of any phenomenon, and that philosophers of the justest discernment, giving up the pretence of discovering the causes of things, have applied themselves to discover by experiment and observation the laws of nature, according to which the phenomena of nature are produced?" O admirabilem licentiam, to indulge the language of Cicero, et miserabilem inscientiam disserendi! Si enim aliquid in eloquendo nec verum, nec falsum est, certè id verum non est. Quod autem verum non est, qui potest non falsum esse? Aut quod falsum non est, qui potest non verum esse? Out of such confusion it is impossible to elicit order. If natural causes are considered as causes at all, let them be regarded as true and real causes; and if they be not, let the term be disclaimed and exploded from the pursuits of science.

In order, however, to give the fairest construction possible to the language of Dr. Reid, I shall state what appear to me to be the principles which he aims to establish, although he no where fully explains himself; and then endeavour to test the truth of those principles.

As to the origin of our idea of power, active power, cause and effect, which are inseparably connected together; he is evidently of the opinion of Mr. Hume in believing that it cannot be explained upon the principles of Mr. Locke, not being derivable either from sensation or reflection. He maintains that the maxim for every effect there must be an effi-

cient cause, is not founded either upon reason or experience, but is to be traced to an original or instinctive principle in the constitution of our nature. Finally, he asserts that mind alone can possess active power, the Supreme Being or Spirits commissioned by him can be regarded as efficient causes; and of consequence the business of natural philosophy, is not to trace real causes and effects, but merely to mark the constant conjunctions of objects or trace the connections between the signs and the things signified by them.* “With regard to the phenomena of nature,” says he, “the important end of knowing their causes, besides gratifying our curiosity, is, that we may know when to expect them, or how to bring them about. This is very often of real importance in life; and this purpose is served, by knowing what, by the course of nature, goes before them and is connected with them; and this, therefore, we call the cause of such a phenomenon.”

First, as to his assertion, that the origin of our idea of power, active power, &c. cannot be explained upon the principles of Mr. Locke, not being referable either to sensation or reflection, but to be derived from some source different from these: I shall not now stop to refute this objection, as it will naturally present itself to consideration when I shall undertake to vindicate from exception that fundamental point of Mr. Locke's system, in which he maintains, in my opinion with unanswerable force of argument, that all our simple ideas are derived through the inlets of sensation and reflection. I trust I shall be able to show that no instance yet enumerated by Dr. Reid forms a valid exception to the theory of the English metaphysician; and until some contradictory facts are alleged, upon the true principle of philosophising, that no more causes of things are to be admitted than are both true and sufficient to explain the appearances, it ought to be received as an established maxim. As Dr. Reid ad-

* See Essay 1, ch. 6, vol. 2. Intellectual and active powers.

mits that we have ideas of power, active power and efficient causes, although he ascribes them with preposterous absurdity rather to an inference of reason, than to the simple perceptions of the mind: this concession is sufficient for our present purpose, as it places this part of metaphysical science upon a different ground from that on which it was placed by Mr. Hume.

The second point maintained though rather obscurely by Dr. Reid is, that the maxim so universally received in philosophy, for every effect there must be an efficient cause, is not derived either from reason or experience, but is to be traced to an original or instinctive principle in the constitution of our nature. "A train of events," says he, "following one another ever so regularly, could never lead us to a notion of a cause, if we had not from our constitution a conviction of the necessity of a cause to every event." We find, in like manner, professor Stewart interpreting and adopting the sentiment of his master, when he says, "if this part of his system (Mr. Hume's) be admitted; and if, at the same time, we admit the authority of that principle of the mind, which leads us to refer every change to an efficient cause," &c. Again he remarks, "in stating the argument for the existence of the deity, several modern philosophers have been at pains to illustrate that law of our nature, which leads us to refer every change we perceive in the universe, to the operation of an efficient cause. This reference is not the result of reasoning but necessarily accompanies the perception, so as to render it impossible for us to see the change without feeling a conviction of the operation of some cause by which it was produced." Dr. Reid, as will be found in his essay upon active power, declares, that power being an operation neither of matter nor mind cannot be an object either of sensation or consciousness, but is an inference made by reason from witnessing the exercise of our powers; and yet we are here told that we have an original and instinc-

tive principle which leads us to refer every effect to an efficient cause antecedently to all reasoning and reflection, although it is admitted, that without our having an idea of power, it would be impossible to have any conception of the relation between cause and effect. As soon as we see any change, we have a conviction of the operation of some cause by which it was produced, although reason has afterwards to go through her slow and operose process in order to arrive at the conclusion, that the cause must have power to produce the effect. This is supposing strange confusion in the works of nature. That must be a sharp-sighted instinct, indeed, which could thus rush to the conclusion that every event in nature must have a cause, before it had ascertained what was included in the idea of a cause. The writers who have broached this theory have not given a name to this principle of our constitution; though they have attempted to christen one no less disavowed by nature to be her offspring, and no less contemptuously handed over by her to its genuine parent, a mistaken and spurious philosophy, viz. the inductive principle. We are informed by these writers that man, instead of coming out of the hands of his Maker, untutored and the simple pupil of nature, in whose school only all his lessons are to be learnt, has two original principles hitherto unnoticed by philosophers, which make him at once acquainted with the deepest lessons of wisdom, the first of which tells him, that for every effect there must be an adequate cause; while the second, the inductive principle, conducts him to the very profound conclusion, a more profound one than Mr. Hume was ever able to attain with all the metaphysical acumen that has been ascribed to him, that similar causes will always produce similar effects, and induces him, at once, antecedently to all experience, to repose confidence in the stability of the order of nature. Perhaps it would have been wiser and more consonant to the maxims of a just philosophy, somewhat to have abridged this attempt at an interpre-

tation of nature, and have resolved these two principles into the inductive principle alone; and then, like another Janus, it might have been represented as having two faces, one looking back upon the past and the other forward to the future; while from a contemplation of the past it might arrive at the maxim, that for every effect in nature there must be an adequate cause; in prospect of the future, it might deduce the inference that similar causes will produce similar effects. It is difficult to treat with seriousness and philosophick gravity opinions so evidently and preposterously absurd.

Dr. Reid could have been betrayed into such a gross misinterpretation of nature only by one of two motives; either from what I cannot but regret to perceive throughout his works, a prurient propensity to cavil at the doctrines of Mr. Locke, or to rid himself of the difficulty in which Mr. Hume had involved him by his sophistry, and from the toils of which he saw no other mode of extrication. In the one case the motive was unworthy of a man so respectable in his talents and attainments; and in the other, it is to be remarked that the expedient adopted to silence the scepticism of Mr. Hume was mistaken and altogether inadmissible. Without having recourse to any expedient of this kind, we trust we shall be able before we arrive at the close of these dissertations, under the conduct of so illustrious a guide as the metaphysician of England, to put into the hands of the votaries of metaphysical science a clue that shall lead them safely out of that dark labyrinth into which they had been translated by Berkeley and Hume. Mr. Hume denies that there is any truth in the maxim, that whatever begins to exist must have a cause of its existence, and endeavours to show that it is neither susceptible of proof, from reason, intuition or experience; and when the brave champion of scepticism vainly imagines that he has successfully silenced all opposition and fought his way to his conclusion, Dr. Reid approaches and informs him that he has all this time been entirely mistaken

and wasting his skill and prowess to no useful purpose, as he has left an impregnable fortress in his rear, for there is an original principle of our nature, which without the aid of intuition, reasoning or experience, leads us to the conviction that for every event in nature there must be an adequate cause. Mr. Hume denies, that there is any ground for the doctrine that similar causes will invariably produce similar effects, maintains that we have no reason to draw any inference concerning the order of nature beyond our own experience, asserts what amounts to the opinion that because the sun has risen and set hitherto, this consideration furnishes no sufficient argument to prove that it will rise and set to-morrow; because fire warms us now, is no adequate proof that it will warm us in future: Dr. Reid relinquishing the contest in the open field, allows himself vanquished there, but again takes refuge in his fortress; and gives notice to his antagonist that he has a second time been engaged in a fruitless warfare, for although he has "clearly and invincibly shown" that our belief in the stability of the order of nature is neither grounded upon intuition, upon reasoning or experience, it is irresistibly inferred from that luminous instinct without which we should be as "blind as bats," the inductive principle. This it must be allowed is a short road to victory, and a summary mode of settling philosophical disputations,

Of this inductive principle of Dr. Reid it will be our province to treat when we shall undertake to explain the method of induction of which lord Bacon was the proposer. Of this new and unchristened instinct by which we arrive at the immensely important conclusion that for every effect in nature there must be an adequate cause, I would proceed to remark. Can we wish that any phenomenon of the human mind should be more satisfactorily explained, than this is explained upon the principles of Mr. Locke? The problem to be solved is, in what manner do we arrive at the maxim, that for every

event there must be an efficient cause? According to the philosophy of Mr. Locke the account to be given of it would be to the following purport, though I believe he has nowhere attempted an especial solution of it. From our constant observation of the operation of bodies upon each other, by sensation, and of the operations of our own minds and the influence which our minds possess over the actions of our bodies in our voluntary exertions, by reflection or consciousness, we arrive at ideas of power, active power, agency, cause and effect. No sooner have we obtained these ideas, than continuing our observations and experiments upon the course of nature, we find from an invariable experience, that no changes or alterations take place in those objects with which we are daily conversant, but in consequence of the action of sufficient causes. This observation commences, and this inference is deduced at a period of life more remote than that to which the strongest memories extend. Hence from a complete induction of facts, from an invariable experience, as far as the imbecility of the human mind allows us to attain to a knowledge of causes, we become deeply convinced of the truth of the maxim, that every thing which begins to exist must have a cause. This is soon strengthened into a confirmed opinion, into an opinion so confirmed, that no sophistry or scepticism can shake or eradicate it.

Is not this a philosophical and satisfactory explanation of the phenomenon? For my part I could not conceive of one that bears more deeply marked upon it the genuine impress and authentic seal of nature and truth.

The following observations upon this subject are very singular as coming from the pen of an avowed champion of theism. "I know of only three or four arguments in the way of abstract reasoning," says Dr. Reid, "that have been urged by philosophers to prove that things which begin to exist must have a cause. One is offered by Mr. Hobbes, another by Dr. Clarke, another by Mr. Locke. Mr. Hume,

in his *Treatise of Human Nature*, has examined them all, and in my opinion has shown that they take for granted the thing to be proved; a kind of false reasoning, which men are very apt to fall into when they attempt to prove what is self-evident."

And could Dr. Reid really have imagined that Mr. Hume, in his *Treatise of Human Nature*, has fairly met and refuted the arguments of Clarke and Locke, and found them liable to the charge of that logical abortion, called a *petitio principii*? They did not live in the days in which nature put forth abortive intellectual exertions, and it was not compatible with their habits to make them. Let us bring the matter to issue between Mr. Hume and his antagonists, and we shall see how well he is entitled to the praise bestowed upon him of obtaining a triumph over them. For our part, instead of agreeing with Dr. Reid in the opinion that Mr. Hume has exposed the fallacy of Mr. Locke's and Dr. Clarke's reasoning, we think that he has never discovered himself able to meet it, nor taken the pains to comprehend it. We perceive in his work only an artful attempt to misrepresent and elude the force of their arguments. Thus he states the arguments of Dr. Clarke.

The second argument which I find used on this head, labours under an equal difficulty. "Every thing," 'tis said, "must have a cause; for if any thing wanted a cause, it would produce itself; that is exist before it existed, which is impossible." This to be sure, which is referred by the author to Dr. Clarke, it must be admitted is an admirable syllogism. Whether Mr. Hume quoted this argument from memory, and supposed at the time he wrote it, that it was Dr. Clarke's, or whether with his usual disingenuousness and subtilty, he was willing to misrepresent and evade the force of that great man's reasoning, it is not easy to decide. He seems to have been perfectly satisfied if he could throw all truth into a cloud of uncertainty, and make his readers sceptics either by having re-

course to fair or foul means. Certain it is that he has not understood or wilfully mis-stated the argument of Dr. Clarke "Every thing," 'tis said, "must have a cause; for if any thing wanted a cause it would produce itself; that is exist before it existed, which is impossible." This would have been strange language in the mouth of Dr. Clarke, who maintains that the Deity, although the cause of all other things, exists without cause. Apply, therefore, the proposition above assumed to the case of the Creator. The Deity exists without a cause, and of consequence must produce himself; that is exist before he existed. Mr. Hume probably would have had no objection to reducing the proof of the self-existence of the Deity to such a manifest absurdity, but the illustrious Dr. was quite of a different turn of thinking, and had too much penetration not to have perceived that, by such a concession, he would have uprooted the whole of his argument in demonstration of the Being and attributes of God, one of the most masterly efforts of human genius. Dr. Clarke, indeed, does maintain and justly, the self-existence of the Deity, but he expressly states in what he conceives that self-existence to consist; "not," says he, "in producing himself, for that is an express contradiction, but in existing by an absolute necessity in the nature of the thing itself."

Equally false and unfounded is the statement given by Mr. Hume, of the next argument which he refers to Mr. Locke as the author; but which when rightly understood and stated is common both to him, Dr. Clarke, and many other ancient and modern writers. He says, that Mr. Locke maintains, "that whatever is produced without any cause, is produced by nothing, or in other words, has nothing for its cause." "But nothing, can never be a cause, no more than it can be something, or equal to two right angles." In his reply to this, it is at once curious, and disgusting to a mind, devoted to the pursuit of truth, to see how he chooses to subtilize, and darken the subject, by words without knowl-

edge and a foolish play upon the expression, "nothing as a cause;" and although he himself allows, that Mr. Locke had alleged that it could no more be a cause, than it could be something or equal to two right angles; yet in the very wantonness and pruriency of debate, he chooses to consider nothing, as Mr. Locke's cause; and such is his rooted antipathy to causes, that he would even fight with this shadowy form and exclude it from the privilege of becoming a cause. "Tis sufficient," says he, "only to observe, that when we exclude all causes, we really exclude them, and neither suppose nothing, nor the object itself, to be the cause of existence." How insignificant and unworthy of the candid spirit of philosophy are such subterfuges and shifts to escape from the power of right reason!

In order that we may perceive how grossly Mr. Hume has misrepresented the opinions of Locke, and Clarke, and how readily Dr. Reid has acceded to the opinions of his countryman, and how prematurely he has adjudged him the palm of victory; let us hear those authors deliver themselves in their own person. "There is no truth, says the English metaphysician, more evident than that something must be from eternity. I never heard of any one so unreasonable, or that would suppose so manifest a contradiction, as a time when there was perfectly nothing, this being of all absurdities the greatest, to imagine that pure nothing, the perfect negation and absence of all beings, should ever produce any real existence." Mr. Locke considers it as one of the greatest of all absurdities to imagine, that pure nothing, the perfect negation and absence of all being, should ever produce any real existence, and on this account Mr. Hume represents him as saying, that nothing is a cause, and with this kind of nothing he feels himself bound to combat. To the same purport as this doctrine of Mr. Locke, is that of Dr. Clarke. He prescribes it as an established and incontrovertible truth, that "whatever exists has a cause, a reason, a

ground of its existence; a foundation on which its existence relies; a ground, or reason why it doth exist, rather than not exist; either in the necessity of its own nature, and then it must have been of itself eternal, or in the will of some other being, and then that otherbeing, must at least, in the order of nature and causality, have existed before it." Having laid thus the deep foundation of his reasoning, he proceeds upon this plan. "Every thing which exists, must either have come into being, out of nothing, absolutely without cause, or it must have been produced by some external cause, or it must be self-existent. Now, to arise out of nothing, absolutely without cause, is a plain contradiction. For to say a thing is produced, and yet there is no cause at all of that production, is, to say that something is effected, when it is effected by nothing: that is, at the same time when it is not effected at all." Now, is this according to Mr. Hume, making nothing a cause, or as both he and Dr. Reid seem willing to believe a *petitio principii* or begging of the question? When it is alleged, that to suppose this world to have begun to exist without a cause at a time when there was nothing, is to suppose something to arise out of nothing, is so far from a begging of the question, that it furnishes an abstract argument from the reason and nature of things in confirmation of the practical truth, that for every effect there must be a cause. When I say, for every thing which begins to exist, there must be a cause, I state a proposition, the truth of which it is evident I could have derived only from experience; but when I declare that it is impossible something should arise out of nothing, I trace a relation between something and nothing, which is abstract; and the connection or disagreement between which ideas, I should be able to perceive, if the case were supposed possible, antecedently to all experience, as soon as I am made acquainted with the import of the terms made use of in the proposition. The truth that out of nothing, something cannot proceed, arise,

or be produced, is intuitively discerned, and cannot, therefore, take for granted any other proposition, and more especially one which it is impossible for us to arrive at but from experience and observation of facts. In this sense of the words, the celebrated maxim of the ancients, *ex nihilo nihil fit*, is undoubtedly just. Notwithstanding, therefore, all that has been alleged to the contrary, we cannot help thinking, that if we were required to give an abstract argument in proof of the maxim, that for every effect in nature there must be a cause, it would be solid and satisfactory to say, that to affirm any effect had taken place without an adequate cause, is to suppose something to arise out of nothing, absolutely without cause.

By this time, I trust, we clearly and distinctly perceive the disingenuousness, and artifice of Mr. Hume, in representing Mr. Locke as asserting that nothing may become a cause, and how well he is entitled to the encomiums bestowed upon him, of which mention was made in the commencement of this article. He never has met and never could fairly have met the arguments of Clarke and Locke.*

* Bishop Watson, in his biography of himself, lately published, has given the following account of one of the events of his college life. "I had not been six months in College before a circumstance happened to me," says he, "trivial in itself, and not fit to be noticed, except that it had some influence on my future life, inasmuch as it gave me a turn to metaphysical disquisition. It was then the custom in Trinity College for all the undergraduates to attend immediately after morning prayers, the College lectures at different tables in the hall, during term time. The lecturers explained to their respective classes certain books, such as Puffendorf de *Officio hominis et Civis*, Clarke on the Attributes, Locke's *Essay*, Duncan's *Logic*, &c.; and once a week the head lecturer examined all the students. The question put to me by the head lecturer was—whether Clarke had demonstrated the absurdity of an infinite succession of changeable and dependent beings? I answered with blushing hesitation, non. The head lecturer, Brocket, with great good nature, mingled with no small surprise, encouraged me to give my reasons for thinking so. I stammered out in bar-

I shall conclude this part of our subject by answering the objections alleged by Dr. Reid himself against the doctrine,

barous Latin (for the examination was in that language) that Clarke had inquired into the origin of a series, which, being from the supposition eternal, could have no origin; and into the first term of a series, which, being from the supposition infinite, could have no first. From this circumstance I was soon cried up, very undeservedly, as a great metaphysician."

From the account here given by the Bishop, we are at a loss to determine whether he considered his argument against the principles of Dr. Clarke valid and conclusive or not. He says, indeed, and very justly, that it gained him undeservedly the reputation of a great metaphysician in the College, but he no where discovers that he was conscious of its fallacy. Now to us the fallacy appears so glaring and the objection so frivolous and shallow, that it was no great compliment to the discernment of his contemporary undergraduates of the institution, that it should have gained him reputation with them for metaphysical acumen, or to his head lecturer, if he did not detect and expose his error. Let us examine the matter as it is stated by the Bishop. The question proposed by the head lecturer was, has Dr. Clarke demonstrated the absurdity of an infinite succession of changeable and dependent beings? The Bishop's reply was no: for Clarke had inquired into the origin of a series, which, being from the supposition eternal, could have no origin; and into the first term of a series, which, being from the supposition infinite, could have no first.—Now, with all due submission to the Bishop's better judgment, it would be strange, indeed, if in determining the question whether it is not absurd to suppose an eternal succession of changeable and dependent beings, that eternal succession or infinite series were taken for granted or included in the supposition. So far from this eternal succession of such beings that have no origin, or this infinite series that could have no first term, being included in the supposition, it formed the very point at issue, viz. to determine, whether there could be any such eternal succession or infinite series of changeable and dependent beings; or in other words, whether changeable and dependent beings must not always have an origin or first term. Dr. Clarke, in our estimation, has shown with irresistible force of argument, the gross absurdity of an eternal succession of changeable and dependent beings, or what is the same thing, beings of this description who have no origin. Thus the Bishop is found guilty of that grossest of all logical abortions, called an *ignorantia elenchi*, or ignorance of the question, and Dr. Clarke's argument relieved from an objection that might be supposed by

that every thing which begins to exist must have a cause being derived from experience.

The first is this—"The proposition to be proved is not a contingent but necessary proposition. It is not, that things which begin to exist commonly have a cause, or even that they always, in fact, have a cause, but they must have a cause and cannot begin to exist without a cause." But in reply let me ask, are the propositions that there is a God, that God is an intelligent Being, that God is benevolent, contingent or necessary truths? No one can deny that they are necessary. It is eternally and immutably true that there is a God, and that he is an intelligent and benevolent being—And yet are not these truths which are collected from experience, from observing in creation the proofs of his existence, his wisdom and goodness, and would it not be impossible to prove these things in any other way but by an appeal to his works? Why should any proposition, because it takes its rise in experience, be thought incapable of being rendered eternally and immutably certain, when it is laid hold of by the understanding, and found to be in accordance with the necessary nature of its ideas, and the unalterable habitudes and relations of things? We talk much, and justly too, of the eter-

those who were unacquainted with the subject to lie against it. Of a nature similar to this of Bishop Watson will be found most of those objections brought by Dr. Reid against the principles of Clarke and Locke. They appear plausible at first sight and upon a superficial view; but when narrowly examined, are found to be frivolous and futile. We consider Dr. Clarke's demonstration of the being and attributes of God as one of the finest monuments of human genius, and would strongly recommend to all students of divinity diligently to study it, and never to be contented until they completely understand it. "*Ille se profecisse sciat,*" says Quintilian, "*cui Cicero valde placebit.*" The same may be said of the writings of Samuel Clarke. That candidate for the ministry may consider himself as having made no inconsiderable advances in divinity, who has learned to understand and relish the writings of that author.

nal and immutable truths of morality, such as that, a just God will reward virtuous men and punish the guilty, that man should obey the will of his Creator and be just towards his fellowmen; and yet are not these maxims derived from experience and observation of the constitution and laws of nature?

The second objection of the Dr. to the doctrine that the truth, for every effect there must be a cause being derived from experience, is, "that general maxims, grounded on experience, have only a degree of probability proportioned to the extent of our experience, and ought always to be understood so as to leave room for exceptions, if future experience should discover any such." This is a rule in which the philosopher is bound by the principles of his order cheerfully to acquiesce. And if ever it should be found in the course of our experience that any effect is produced without the operation of a cause, we shall be compelled to abandon our maxim, whether it be estimated as a contingent or necessary proposition.

The third objection is frivolous and futile—"I do not see," says he, "that experience could satisfy us that every change in nature actually has a cause. In the far greatest part of the changes in nature that fall within our observation, the causes are unknown; and therefore, from experience we cannot know whether they have causes or not." But is it not a settled principle in philosophy, and indispensable to its advancement, that maxims collected from an ample induction of facts should be regarded as universal, until other facts are discovered that form just exceptions to them, and limit the the extent of their application? The whole race of man, if they could be consulted, have not had experience that every body upon the earth's surface gravitates towards the centre, and yet have we not sufficient reason to believe that all bodies around the earth's surface gravitate towards its centre, as universally true?

Before I conclude this article, I cannot refrain from indulging a single observation more. In the commencement of our strictures upon Dr. Reid's doctrine on this point, we find him asserting, "that a train of events following one another ever so regularly, could never lead us to a notion of a cause, if we had not from our constitution a conviction of the necessity of a cause to every event." Here he traces our belief in the necessity of a cause to every event, to an instinctive and original principle in our constitution, and, of course, one which is distinct from all the other constituent principles of our nature. In his further observations upon the same subject, he says; "I know of only three or four arguments in the way of abstract reasoning that have been urged by philosophers to prove, that things which begin to exist must have a cause. One is offered by Mr. Hobbes, another by Dr. Clarke, and another by Mr. Locke. Mr. Hume, in his *Treatise of Human Nature*, has examined them all, and in my opinion has shown, that they take for granted the thing to be proved; a kind of false reasoning which men are very apt to fall into when they attempt to prove what is self-evident." Here, the truth, that for every event there must be a cause, before traced to an original and instinctive principle in the constitution of our nature, is said to be self-evident. How do these doctrines comport with each other? If it be a self-evident truth, whence the necessity of supposing a distinct principle in the formation of our nature, in order to account for our having arrived at it? Could we not have obtained it as we do our other intuitive perceptions? Why unnecessarily multiply the original and instinctive principles in the constitution of our nature? The method which nature pursues is a method of admirable simplicity and order, that which some writers would prescribe to her is a plan of intricacy, entanglement and confusion.

Passing from the objections of Dr. Reid against the systems of other philosophers on these points, I proceed

to examine the next peculiarity in his own doctrine about cause and effect. He maintains, that material substances cannot possess active power, and, of course, cannot be regarded as efficient causes; that the province of natural philosophy is not to trace real causes and effects, but merely to mark the constant conjunctions of objects and to ascertain the laws of nature; and finally, that mind alone, either the mind of the Supreme Being or Spirits commissioned by him, can possess active power, or be, in the true sense of the word, efficient causes. In favour of these views of things he endeavours to enlist Newton and the soundest philosophers. "Those philosophers," says he, "appear to have had the justest views of nature, as well as the weakness of human understanding, who giving up the pretence of discovering the causes of the operations of nature, have applied themselves to discover by observation and experiment, the rules or laws of nature, according to which the phenomena of nature are produced." Again to the same purport. "The whole object of natural philosophy," as Newton expressly teaches, "is reducible to these two heads; first, by just induction from experiment and observation, to discover the laws of nature, and then to apply those laws to the solution of the phenomena of nature. This is all that this great philosopher attempted, and all that he thought attainable." Here we perceive that all the phenomena of the natural world, are said to be referable to some law or laws of nature as their cause. But the Dr. informs us, as we have seen in extracts from his works, and I think with good reason, that the laws of nature are not agents. They are not endowed with active power, and therefore cannot be causes in the proper sense. They are only the rules according to which the unknown (or he might have added the known) cause acts. Now, since for every effect in nature there must be an efficient cause, let us ask what is the efficient cause of natural appearances? The only answer which the Dr. could consist-

ently return, is mind, either that of the Supreme Being or of Spirits commissioned by him. The Supreme Being, then, operating according to the laws of nature, is the real efficient cause of all natural phenomena. What becomes of matter in this system, and what office is left it to perform? Surely material substances disappear from the stage in such a philosophy: Dr. Reid informs us that he once heartily embraced the opinions of Bishop Berkeley, and really and truly believed that there is no such thing as a material universe, sun, moon, stars, the earth, mountains, rivers, trees and men, and we are inclined to think, however he may have persuaded himself to the contrary, from an apprehension of those ulterior consequences which he saw resulting from this belief, that he never entirely released himself from the toils of that fantastical theory, for here we find him unexpectedly arrived at it, although by a route somewhat more circuitous than that taken by the English prelate. Plato imagined that he could construct a world out of matter, ideas, and a creating mind; Aristotle out of matter, form, and privation; but Dr. Reid can work with more dexterity than either, for he can fabricate a universe, and afterwards conduct all its operations by means of mind and the laws of nature. And this doctrine we find too attempted to be supported by the sacred authority of Newton and the philosophers. As to the philosophers, it is certain that among all the ancients, the province of philosophy was regarded as an investigation of causes, real efficient causes. See what Cicero says on this subject in his treatise *de fato*, which has been quoted both by Dr. Reid and professor Stewart in a mutilated form, only so far as made it appear to comport with their opinions, but so as not to elucidate the real sentiments of the author. *Causa, autem ea est, quæ id efficit, cujus est causa; ut vulnus mortis, cruditas morbi, ignis ardoris. Itaque non sic causa intelligi debet, ut quod cuique antecedit, id ei causa sit, sed quod cuique efficienter antecedit. Nec quod in campum descende-*

rem id fuisse causa cur pila luderem; nec Hecubam causam interritus fuisse Trojanis, quod Alexandrum genuerit. This passage shows that while the term cause was received, at that time as well as now, in so many vague and uncertain acceptations, Cicero as a philosopher perfectly understood its philosophical import. That is cause, he maintains, which has power to produce the thing called its effect; not merely that which precedes it (as if he had anticipated the theories of Mr. Hume and Dr. Reid) but which efficiently precedes it; as a wound produces death, crudity disease, and fire heat. Here we see that Cicero considers fire the efficient cause of heat. As to the opinion of Newton, that he considered it the business of natural philosophy to investigate efficient causes there cannot be a shadow of doubt. What does he mean when in the commencement of his principia he prescribes his two first rules of philosophising? "No more causes of things are to be admitted than are both true and sufficient to explain the appearances; and for the same appearances, because of the uniformity of nature, the same causes are to be assigned." What can he here mean by the term cause, true and efficient cause? Take the passages before cited from him, and his opinion is ascertained beyond any dispute. "What the efficient cause (*causa efficiens*) of attraction is, I do not here inquire. I use the word attraction only in general, to signify the force by which bodies tend towards each other, whatever be the cause of that force." Could he have more distinctly marked the distinction between an efficient cause and the laws by which that cause acts? He evidently regards the efficient cause of attraction as a legitimate object of philosophical research, avowing at the same time that he had not been able to discover it, not being deducible from any phenomena he had witnessed, and he did not choose to frame an hypothesis. Of what nature this efficient cause might have been, in the opinion of this great man, is sufficiently ascertained from the conjecture he modestly

hazards of its being an ethereal elastic medium pervading the whole system and binding its parts together.

Thus, we perceive how fruitless and ineffectual is the attempt of Dr. Reid to enlist Newton of his party. "It is true" he says, "that a great deal may be considered as done, when we have discovered some laws of nature, by which a cause acts in producing the phenomena, although that cause itself may remain unknown. In this respect also his views were accurate and profound. Is not much accomplished by him, when from having discovered a few general laws of motion by which bodies gravitate towards each other, he has determined the sizes, distances, periodical revolutions, and all other phenomena of the heavenly bodies, although the occult cause of all these outward appearances remains unrevealed? But could the Grand Agent that produces these results be developed, would not this be making still greater advances towards perfection in the science of physical nature? Wonders have been performed by philosophers in natural science, but still greater wonders might be accomplished, could we once be so fortunate as to attain access to that great Moving Spring that sets into operation the whole vast machinery.

Let us now briefly enter into the merits of Dr. Reid's opinions, and test their own truth without reference to the sentiments of others. On what ground do we conclude that matter is incapable of exerting active power, and that in natural philosophy we have nothing to do with efficient causes. We feel the heat of fire, and perceive the light of the sun. The natural impression of a mind untutored in the language of system is, "that fire is," as Cicero says, "the real efficient cause of the heat, and the sun of light." Dr. Reid, however, approaches and informs us that we are all this time mistaken, that it is not the fire which warms us or the sun which gives us light, since matter cannot act; but it is the Creator himself who produces these results by the laws of nature. We stand astonished at the intelligence, and find a

difficulty in comprehending it. It is a mystery too deep to be penetrated except by adepts in the new system of philosophy. If the question were, whether matter possesses in itself the power of originating motion or could become a primary cause, I conceive the case would be entirely altered. We have arguments enough to demonstrate that mind alone could be the originator of motion, and that there must be an immaterial and Intelligent Being, who alone can have been eternal and the Great Cause of all other things. But is there any good ground to infer that it is not in the power of the Almighty, or that this power has not been exercised, to communicate to matter efficacy sufficient to enable it to produce certain results? In fact, have we not incontestible proof that it does produce them? Sir Isaac Newton, we have seen, professed himself unable to ascertain the efficient cause of gravity, and merely conjectures that it may be produced by a thin and elastic fluid; but does he say the same of the rainbow and other optical phenomena? Are not the rays of light the real efficient cause of these beautiful appearances? If we suppose the Supreme Being or mind to be the immediate cause of light that issues from the sun, is it mind also that is refracted and reflected in drops of rain falling from the clouds, so as to spread upon them, in vision, that variety of colours? There seems to be an evident absurdity in supposing mind to be the only agent throughout the whole chain of causes acting in nature. The heat of the sun between the tropics rarefies the air and occasions the trade-winds; the trade-winds act upon the sails of the vessel so as to propel her in her course; the vessel bears the navigator to his port: Now, it is easy to conceive of the creator as the first link in this chain of causes, and that he communicates to the sun the power to diffuse abroad his heat; but how shall we conceive that it is he himself who acts immediately in rarefying the air, exciting the wind, filling the sails of the vessel, and wafting the navigator to his haven? No doubt all these opera-

tions are performed by his appointment and under his superintendence and controul, and all the agents in physical nature, the light, heat, winds, seas, and clouds, when performing the various functions allotted them in creation, are only fulfilling his wise purposes. He has impressed upon all physical principles the laws or rules of their action; but there is a manifest absurdity in supposing him the sole agent in the whole train of events. Is not the wind that fills the sails of the vessel, the efficient cause of its motion in the deep, and the heat that rarefies and excites the air, the efficient cause of the winds? Thousands of other cases might be stated, in which the absurdity of making mind the sole agent in the operations of nature might be displayed; but, we cannot but be of opinion, it would be unnecessary, as those we have already alleged must be sufficient.

The doctrine, therefore, of God's acting by means of instruments or second causes, upon which he has originally impressed their several laws, seems to have a deep foundation in nature and the necessary train of our ideas, and is conformable to the first suggestions of the human mind and the unsophisticated sentiments of all mankind. We construct a complicated piece of machinery, and prepare it for its operations. By the turning of a single wheel we set the whole in motion, one wheel moving a second, and that a third, and so on. Now, although we are ourselves the principal and responsible movers, has not the second wheel the power communicated to it of moving the third, and the third the fourth, and so forth? So it is evidently with God. He made and arranged the vast machinery of the universe, and under his superintendence it is preserved in order, and performs its diversified operations; but does it not exalt our ideas of his wisdom and greatness to suppose, that he has so adjusted its parts to each other, and so exquisitely wrought the whole into a regular system, as that his immediate inter-

ference in the scheme, except where he originally contemplated such interference, shall seldom, if ever, be necessary?

There are two particulars in the opinions of Dr. Reid, which it will be worth while to examine a little more minutely; the one, why we should deny to matter the possibility of having active power, even when that power is considered as derived; the other, why we should deny that efficient causes are to be traced in natural events, and yet allow moral agents to be true efficient.

As to the first particular, why we should deny to matter the possibility of possessing active power, even when that power is considered as derived, there would seem to be no just ground in nature, or in the connection of our ideas for such an opinion. We have the same reason to believe that material substances possess a power, under the influence of which they act from necessity, as that mind is also endowed with a power, under the influence of which we act voluntarily. The only distinction between them is, that our knowledge and belief of the one is derived from sensation, our knowledge and belief of the other is derived from reflection. From the earliest period of life, we observe the operations of bodies upon one another, and the changes and modifications, which by their applications to each other, they produce. We remark also, when we turn our attention inward and reflect upon the operations of our own minds, that we can fix our attention upon any one subject or change, at pleasure, the train of our thoughts; and moreover, that by the determinations of our will, we can put our bodies into any motion we choose. By sensation, therefore; that is, by observing the actions of bodies upon each other and the results of those actions, and by reflection also, that is, by observing the operations of our minds and the influence which our wills possess over our bodily actions, we arrive at ideas of power, active power, efficiency. Mr. Locke thinks, indeed, and perhaps not without reason, that we have a clearer idea of active power from reflection,

than from sensation. However this may be, we cannot but remark that there is a very wide difference between the power which we exercise in thinking and acting, and that which is exercised by the objects of the external world that surround us. When we move our limbs or direct the attention of our minds to any subject, we are conscious that these are voluntary acts appertaining to a being that is possessed of understanding and discretion. When, on the other hand, the cloud rises in the air and is borne along by the wind, when the stream flows in its banks, or the vessel is wafted on its bosom, we are sensible that these things are effected by a very different process from that of which we had been conscious in our own actions. Thus we derive very distinct conceptions of voluntary and involuntary, or necessary agents. But the proof is as complete and satisfactory, that matter acts or exercises powers under the controul of necessary laws, as that mind acts or exercises its powers, under the influence of its own choice or determinations.

Why, then, to merge the second question in the first; why should we deny that efficient causes are to be traced in natural philosophy, and yet allow moral agents to be true efficient causes? Father Mallebranche consistently maintains, that God is the sole operating cause throughout the universe, as well in the moral as the physical world. This theory, however indefensible we may deem it, and clogged with insuperable difficulties, has at least the merit of being consistent with itself in its various parts. If God be regarded as the sole operating cause of the appearances in the natural world, why not make him the sole operating cause of the thoughts and actions of men? No reason can be given for the one theory, which will not apply with equal force in the establishment of the other. But matter is not capable of exercising active power. Neither do we suppose that our minds possess power, which is undervived or independent. But the Creator has endowed them with the privilege of originating motion. Why not, then,

since he has made mind capable of voluntary action, make matter capable of necessary action? I have no more difficulty in conceiving that God should communicate to fire the power of reducing wood to charcoal, than that he should convey to a rational creature the power of voluntary action.

CHAPTER VI.

The Opinions of Professor Stewart.

I shall conclude this statement of the opinions of different writers on the subject of cause and effect, with that of Dugald Stewart, professor of moral philosophy, in the University of Edinburgh. He treads so closely in the footsteps of Dr. Reid, that when we have exhibited the opinions of the one, we have, at the same time, as to all material points, given those of the other also. What the one, had obscurely intimated as his system, the other assumes and promulgates as established doctrines, merely throwing into the whole compound some slight admixtures of his own.

In the first place, Professor Stewart agrees with Dr. Reid in asserting, that we cannot arrive at the truth, for every effect there must be an efficient cause, from intuition, reason or experience, but that it is to be traced only to an original and instinctive principle in the constitution of our nature.

Secondly, he agrees with Dr. Reid in maintaining, that no such thing as an efficient cause is to be ascertained in the material world, and that the province of natural philosophy is not to trace the series of causes and effects, but merely to note the constant conjunctions of objects, and the connection between the signs and the things signified by them; and moreover, as the pupil is always more daring than his master in hazarding and supporting extraordinary tenets, he actually recommends the exclusion of the terms from the pursuits of physical science.

With principles, thus accordant with those of Dr. Reid, and Mr. Hume also, in the last particular, he kneads a few peculiar sentiments of his own. He allows, what Dr. Reid

probably would have been reluctant to admit, that in espousing these opinions they advance half way with Mr. Hume on the road towards his sceptical conclusions, and there desert him. Finally, he asserts, that from premises similar to those of Mr. Hume, Father Mallebranche deduced the inference, that God is the sole operating cause throughout the universe. I shall animadvert upon each of these items in his doctrine in regular order.

In the first place, Professor Stewart agrees with Dr. Reid in asserting, that we cannot arrive at the truth, for every effect in nature there must be an adequate cause, by intuition, reason, or experience, but that it is to be traced only to an original and instinctive principle in the constitution of our nature. His opinion on this point is expressed in the following passages. "In stating the argument for the existence of the Deity, several modern philosophers have been at pains to illustrate that law of our nature, which leads us to refer every change in the universe to the operation of an efficient cause. This reference is not the result of reasoning, but necessarily accompanies the perception, so as to render it impossible for us to see the change, without feeling a conviction of the operation of some cause, by which it is produced." Again. "If this part of his system be admitted, and at the same time we admit the authority of that principle of the mind, which leads us to refer every change to the operation of an efficient cause, Mr. Hume's doctrine seems to be more favourable to theism than even the common notions upon this subject, as it keeps the Deity always in view, not only as the first, but as the constantly operating efficient cause in nature, and as the great connecting principle among all the various phenomena which we observe." Those who have taken the trouble to toil through the dark abyss of the *Treatise of Human Nature*, and at the same time have at heart the great interests of truth and mankind, will be somewhat startled to hear it seriously asserted, that there

is any process by which Mr. Hume's principles may be made to undergo such a thorough transformation, as to come out more favourable to theism than even the common notions upon this subject, and to keep the Deity always in view, not only as the first, but as the constantly operating cause in nature. If such a miracle as this can be performed, they are ready to exclaim, surely that ancient and inveterate war which has been waged, from time immemorial, between the great contending powers of atheism and theism, may now be brought to an amicable termination. Mr. Hume's principles reconcilable to those of theism! *Placidis coeant immitia, serpentes avibus gementur, tigribus agni.* What pity is it, that old Democritus, Leucippus, Epicurus, Spinoza, Hobbes, and a long list of others of a similar stamp, had not been made acquainted with this wonderful secret? How completely might they have escaped that load of obloquy and odium, with which their memories have been burthened, and mankind, that long train of mischievous effects that have resulted from their writings? For, surely, if by any contrivance the doctrines of Mr. Hume can be brought to accord with the principles of theism, the same may be done for those of any other atheist that ever lived. A ranker and more poisonous weed of atheism never sprang from the teeming garden of Epicurus, than that which has been planted and brought to maturity, and distributed among mankind in various infusions, by the great modern sceptick of Scotland. And by what art and address is it, that this deleterious drug, is not only to be rendered innocuous but wholesome to the patient? Forsooth, by a slight decoction of that rare exotick, unknown to the walks and unrevealed to the curiosity of the scientifick inquirer, called an instinctive and original principle of our constitution, which, antecedently to reason and reflection, leads us to the prodigiously important conclusion, that for every change in nature there must be an adequate cause. The voice of this single instinct is to

supersede the exercise of reason, vacate the lessons of experience, and silence the clamours of atheism. Hobbes may prove by unanswerable arguments, if he please, that the universe is subjected to the controul of an irresistible fate; Spinoza, that the universe is itself God; Epicurus, that it was formed by a fortuitous concourse of atoms; Mr. Hume, that it was not formed at all, since there is no good ground of reasoning from the effect to the cause; and we have only to admit the existence of this small instinct which so infallibly guides us, and all their systems are reconciled to theism.

In addition to what I have already said about this wonder working instinct, upon the decision of whose oracular voice the Scottish metaphysicians are willing to rest the infinitely important truth of the Being of a God, suppose we should ask the question, what proof have we of the existence of such a distinct principle in our constitution? The question, I shrewdly conjecture, would put the advocates of the theory to a nonplus; for, singular as it may appear, not one proof has been exhibited of the existence of such an instinct. It has been gratuitously assumed, merely to answer the purposes of a system, while not a single fact has been alleged to show that it has a real existence in our constitution. Will it be said that the fact of our having arrived at the conclusion, that for every change in nature there must be an adequate cause, is a proof of its existence in *rerum natura*? But has nature, or rather nature's God, found it necessary to confer upon us a separate instinct, in order that we might attain this single maxim, and which as soon as it has accomplished this sole object, drops its commission and never again appears upon the scene? Is this consistent with the usual simplicity of nature? There would be as good ground in reason and a right understanding of nature to conclude, that so many distinct principles are given us by the Creator, in order that we might attain to a knowledge of all the rules of philosophising prescribed by Newton, as well as the fun-

damental truths in all the branches of science. Besides, to conclude our account of this part of the subject, by presenting it in another point of light. We are told by the professor, and his master before him, that we have an original and instinctive principle which leads us to the conclusion, that for every event in nature there must be an efficient cause. Now, does not this instinct as powerfully lead us to conclude, that those causes, which operate to produce their effects in the physical world, are really and truly efficient causes; or is this instinct so profound a metaphysician as to draw the line of discrimination between physical and efficient causes? If it cannot draw this distinction, what purpose can it serve in our constitution, but to lead us directly into error; since the first and unbiassed impressions of all mankind, as allowed by the professor is, that the causes which operate in the natural world are real efficient, or, as they have been fancifully denominated without any license from authority, metaphysical causes. The conclusion which we conceive ourselves at liberty to draw, therefore, is, that this instinct, hitherto unknown to the philosophical world, has none of the marks or lineaments of the genuine offspring of nature, but the most decisive proofs of its being a spurious bantling, born, nursed and educated in the school of a false and mistaken metaphysick. Without further ceremony, therefore, we give it its dismissal without a single benediction; and consign it to that oblivion, from which it has just emerged, to become the disgrace of its parents, the outcast of nature, and the scorn of philosophy.

The second particular in the doctrine of the professor, which also he has assumed without proof from Dr. Reid, is, that no such thing as an efficient cause is to be ascertained in the natural world, and that the province of natural philosophy, is not, as all mankind have hitherto supposed, to trace the series of causes and effects, but merely to note the conjunctions of objects, or ascertain the relations between the

signs and the things signified by them. He even recommends the rejection of the terms causes and effects from the investigations of natural science. As to this recommendation, however respectable the authority from which it proceeds, we are inclined to think that philosophers are likely to prove refractory in the matter, and refuse their compliance with a demand, which requires them to relinquish the use of terms at once so expressive of their ideas, so well suited to their unsophisticated views of things, and that have been consecrated to the same purpose by the immemorial usage of the soundest and best interpreters of nature; more especially when it is understood, that they are to substitute in their stead that unintelligible jargon of signs and the things signified by them, that have gained such general prevalence in the recent school of metaphysicks.

But to proceed with the sentiments of the professor. It is but just in the first instance to display, too, the merits of the author of the doctrines he espouses. "I am very ready to acknowledge," says he, "that this doctrine concerning the object of natural philosophy is not altogether agreeable to popular prejudices. When a man unaccustomed to metaphysical speculations, is told for the first time, that the science of physicks gives us no information concerning the efficient causes of the phenomena, about which it is employed, he feels some degree of surprise and mortification. The natural bias of the mind is surely to conceive physical events as somehow linked together, and material substances as possessed of certain powers and virtues, which fit them to produce particular effects. That we have no reason to believe this to be the case, has been shown in a very satisfactory manner by Mr. Hume and by other writers." Here we are told that there is a natural prejudice or bias among mankind to conceive of physical causes and effects as somehow linked together, and material substances as possessed of certain powers and virtues which fit them to produce particular ef-

fects. Now is it not strange that there should be such a natural bias as this among the vulgar, to imagine the causes that operate in the physical world to be real efficient causes, if we are all possessed of an instinctive principle which leads us, antecedently to reflection, to ascribe all effects to true efficient causes? We presume that this must be a previous effort of instinct in its unenlightened state, before it has received its instruction in the schools, and is rendered a profound metaphysician. Are the natural biasses and prejudices of mankind usually in favour of, or in opposition to, their instincts, which are generally regarded as discriminated from the other constituent powers of our nature, by the circumstance, that they conduct us strongly and infallibly to their objects, without being subject to the errors and failures even of our higher faculties?

But Mr. Hume has discovered that this natural bias of the mind, to conceive that material substances are possessed of certain powers and virtues which fit them to produce particular effects, is altogether fallacious. That is to say, looking at the candle which is now before me, when I perceive the flame consuming the wick and spermaceti, and diffusing light upon my paper, I, and all persons, who like myself are uninstructed in the tenets of the new philosophy, am silly enough to conclude, that there is a real power or virtue communicated to the flame to enable it to consume the wick, and shed abroad its light; but Mr. Hume has shown in a very satisfactory manner, that in this belief we are entirely mistaken, and that the flame possesses no such power or virtue. If then, we ask the question, what is the cause of the consumption of the wick, and the diffusion of the light from the flame? Mr. Hume, with a smile of indifference, would tell us that we have no reason to conclude that there is any cause in the case, as all we can know of the matter is, that these objects, the consumption of the wick, and the diffusion of light, and the appearance of the flame, are contiguous and conjoined to

each other. If, dissatisfied with this solution, we turn to the Professor, he resolves all our difficulties by informing us, that although it be true, as Mr. Hume has asserted, that we have no just reason to conclude that there is any power or virtue residing in the flame to produce these results, yet they are to be referred to the efficient cause himself, that is to the Creator. Thus, God himself is brought in as the immediate and sole operating cause throughout the natural world; and one of the least defensible, though not the most dangerous parts of the doctrine of Father Mallebranche, is obtruded upon us, without the relief and advantage of its consistency and harmony with itself. When by the poison of a rattlesnake we are killed, or torn to pieces by the tiger; when the lightning darts upon our houses and the hurricane destroys us in the ocean; when the earthquake opens the earth and swallows us alive, or the lava of the volcanoe overwhelm us with ruin; in all these cases, there is no power in the poison of the snake to cause our end; no strength in the tiger to destroy us; no force in the lightning, the winds or those agents that cause earthquakes and volcanoes; but all these results are produced by the immediate operative agency of God himself. Such a philosophy partakes too much of the unintelligible jargon of the schoolmen; and offers too great an outrage to the principles of common sense and sound understanding, not to be disclaimed by the sober inquirer after truth, with indignation and scorn.

But we have a much greater exploit of Mr. Hume to relate, in the next place, than the discovery that there is no power in fire to burn us; no force in lightning to destroy us; no strength in the tiger to rend and devour us.

“Mr. Hume,” says the professor, “had the merit of showing that our common language, with respect to cause and effect, is merely analogical, and that if there be any links among physical events they must forever remain invisible to us.” This too, to be sure, was a notable discovery, and an

admirable effort of genius for the great historian of England! "When we speak of a chain of causes and effects, we are informed by Mr. Hume," says the Professor, "who seems to have attained to such deep knowledge without any aid from supernatural light, as he never laid claim to any, that there is no real chain in the case, but that the expression is merely figurative, or, if you prefer the term, analogical. For instance, the vessel moves in the stream by the force of the tide; the tide rises and falls from the approach and recess of the waters of the ocean; the ocean is influenced in its mass of fluid by the attraction of the sun and moon; attraction is occasioned by some unknown cause; this unknown cause derives its power from the hand of the Almighty. Here, we are in the habit of speaking of a chain of causes and effects, the first link of which, is, as usual, traced to the throne of the Almighty. But Mr. Hume has discovered, by mere dint of natural penetration, that there is in reality no material chain, connecting the vessel with the throne of the Almighty. If any persons ever thought so, in all good will and charity, we leave them to be corrected by Mr. Hume; but, for ourselves, although we would make it a matter of conscience not to withhold his due praise even from an atheist and sceptic; yet we cannot conceive how any one in his senses, could be so simple as to imagine that he was using, in such modes of expression, any other than a metaphorical language.

We have already displayed in the works of Mr. Hume a much more daring and gigantic effort, than that which is ascribed to him by the Professor. Not contented with discovering (if he has done so) that our language about cause and effect, is merely analogical, we find him endeavouring by one great exertion to break the chain that binds his race and all created nature to the throne of the Almighty. Like the Titans of old, he wages impious war against the throne and government of God, and essays to obliterate from the minds of men a belief in his existence, and all trust in his providence. Let

us see, however, with what cool indifference and philosophick sang-froid, a modern philosopher can allude to this serious and atrocious attempt of Mr. Hume. "This language," says our Professor, "has even been adopted by philosophers, and by atheists as well as theists. The latter have represented natural events as parts of a great chain, the highest link of which is supported by the Deity; the former have pretended that there is no absurdity in supposing the number of links to be infinite." This it must be confessed is a very polite and complacent allusion to the doctrine of a perpetual succession of causes, upon which all the best philosophers, both of ancient and modern times, have agreed in setting the seal of their reprobation, and the absurdity of which Dr. Clarke, in his demonstration of the being and attributes of God, has so completely exposed. For our part, we cannot but regret to say, that professor Stewart, popular a writer as he has rendered himself in some circles, and favourable as has been the reception with which his works have generally met; in our estimation as the advocate of virtue and religion, assumes a very questionable shape. If he be the real friend of virtue and religion, and have at heart the great interests of truth and mankind, could he refer with the same apparent approbation and satisfaction to the works of the enemies of truth and its abettors, of atheists and theists? How gently does he touch the abominable doctrines of Mr. Hume; sometimes even endeavouring to palliate them and appropriate them to himself! No matter whether men approve themselves the true interpreters of nature, or its corruptors and falsifiers; the supporters of morals and religion, or their subverters; sound politicians, or anarchists and disorganizers; the propagators of the most just and sublime lessons of philosophy, or the retailers of a miserable jargon; they all have equally respectful and honourable mention in his pages. Newton, Locke, Bacon, Clarke, Aristotle, Des Cartes, Mallebranche, Butler, successively appear upon the stage, in company with Rous-

seau, D'Alembert, Helvetius, Condorcet, Diderot, Godwin, and a host of worthies of a similar description, while they are all received with the most obsequious homage and courtesy, crowned with undistinguished honours, and dismissed with a like philosophick suavity and grace. This may all be regarded as appertaining to the office, and comporting with the pretensions of the modern philosopher; but we cannot withhold the observation, that it appears to us to be neither consistent with the spirit, nor indicative of those moral feelings, which should characterize the faithful friend and zealous advocate of truth and righteousness.

To proceed from this short digression in stating the opinions of the Professor. "It seems now," says he, "to be pretty generally agreed among philosophers, that there is no instance in which we are able to perceive a necessary connection between two successive events, or to comprehend in what manner the one proceeds from the other as a cause. From experience we learn that there are many events which are constantly conjoined, so that the one invariably follows the other; but it is possible, for any thing that we know to the contrary, that this connexion, though a constant one, may not be a necessary connexion; nay, it is possible, that there may be no necessary connexions among any of the phenomena which we see; and if there be any such connections existing, we may rest assured that we shall never be able to discover them." Again—"the word cause is used, both by philosophers and the vulgar, in two senses, which are widely different: when it is said that every change in nature indicates the operation of a cause, the word cause expresses something which is supposed to be necessarily connected with the change, and without which it could not have happened. This may be called the metaphysical meaning of the word, and such causes may be called metaphysical or efficient causes. In natural philosophy, however, when we speak of one thing being the cause of another, all that we mean is, that the two

are constantly conjoined, so that when we see the one we may expect the other. The causes which are the objects of our investigation in natural philosophy, may, for the sake of distinction, be called physical causes."

Such is the doctrine held upon this subject, and such the ground upon which it is defended. "It seems now," says the professor, "to be pretty generally agreed among philosophers, that there is no instance in which we are able to perceive a necessary connection between two successive events, or to comprehend in what manner the one proceeds from the other as a cause." As to the last part of this proposition, which relates to the possibility of our comprehending the manner in which one event proceeds from the other as its cause; if he considers this a part of the new system, he is entirely mistaken, since no philosopher, who understood the limited nature of the human faculties, ever supposed himself able to discover the mode in which any one cause gives rise to its effect. The water which we drink quenches our thirst, and the food which we eat relieves us from hunger and sustains our bodies, and we know that there must be a power or virtue in water and food to produce these effects, or they would not have taken place; but as to the manner in which they operate upon our bodies to accomplish these purposes, philosophy acknowledges that to be unknown to her. Many passages to this purport might be adduced from Mr. Locke, but it cannot be necessary, as it is regarded in science, as an established and incontrovertible truth.

The peculiarity in the Professor's doctrine, may, therefore, be considered as contained in the first part of the proposition. "It is now pretty generally agreed among philosophers, that there is no instance in which we are able to perceive a necessary connexion between two successive events." And again, he explains. "From experience, indeed, we learn that there are many events which are constantly conjoined, so that the one invariably follows the other; but it is possible,

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for any thing we know to the contrary, that this connexion, though a constant one, as far as our observation has reached, may not be a necessary connexion. Nay, it is possible, that there may be no necessary connexions among any of the phenomena which we see; and if there be any such connexions existing, we may be assured we shall never be able to discover them." This is the argument, or one of the arguments, by which Mr. Hume endeavours to overturn the doctrine of causality or efficiency in objects to produce their effects; and which the professor admits to be unanswerable, as far as it relates to the natural world. The professor has evidently allowed himself to be entrapped in the snare, which Mr. Hume has laid for his victims. The whole force of the reasoning is sapped, and the subtilty of Mr. Hume revealed, by adverting to the ambiguity with which he chooses to employ the terms necessary connexion between causes and effects, which he would consider as equivalent to the expressions, efficiency in causes to produce their effects. We find the Professor imbibing his notions from Mr. Hume, and accordingly giving this as the usual acceptance of the term cause. "When it is said that every change in nature indicates the operation of a cause, the word cause expresses something necessarily connected with the change, and without which it could not have happened." Here we find an entirely new definition of the term cause, embracing a wider latitude of meaning than any before annexed to it. Now, is it possible for the narrow mind of man to decide, that there are any two events in the whole compass of the moral and physical world, which are so necessarily connected together that the one could not have existed without the other? The only single object which we are able to conceive, that could not possibly have existed without another, is the universe without a God to create it; for we are sure that God might exist without the universe, as it was not an act of necessity that he formed it, but of choice. So then, if it be true, that a

cause is something so necessarily connected with its effect, that without it that effect could not have happened, it is evident that there can be but one such single and sole cause in the universe, and that is the Creator himself. For put the matter, for a moment, to the trial of a few examples, taken from the physical and moral world. Fire burns us, and we are sure from our sensation, that there must be in the fire power to produce that effect upon us; but can we be certain, that the sensation of heat in us, and the operation of that power in fire, are so inseparably connected together, that the one could not have happened without the action of the other? Could not God have contrived other methods of affecting our senses in the same way, or have done it by his own immediate agency? The same reasoning will apply with equal force in reference to mind. Not a thought, volition, desire, voluntary exertion, of which God himself could not be the author, without the exercise of our powers. Not one of those effects, which are always regarded to be caused by the exertion of our mental powers, which God himself might not have brought about in a way different from that which he has now established, and which, of consequence, cannot be considered as so necessarily connected with the exertion of those powers, that, without them, they could not have happened. I repeat it, therefore, if by the word cause be meant something so necessarily connected with its effect that, without it, that effect would not have taken place, there can be but one great cause both in the physical and moral world, and we are completely landed in the mystical and incomprehensible theory of Father Mallebranche. Here, then, God, who was before, as we have seen, made the immediate operating cause of both evil and good in the physical world, is now made equally the immediate operating cause of all evil as well as good in the moral; and the free agency of man together with all accountability to his Maker are at once uprooted. When the traitor betrays his country, or the child

puts his father to death; when the assassin cuts off his benefactor, or the suicide throws back indignantly into the face of his Creator that existence which he had communicated; all these culprits are become irresponsible agents, and are no longer criminal, for God is the sole and immediate operating cause in all these transactions. In a word, under a theory of this kind, God is the true author of all the blasphemies, treacheries, adulteries, murders, and the whole train of enormities which are perpetrated among mankind. Father Mallebranche laboured hard, indeed, to relieve his doctrine from these formidable objections; but, although we cannot but award him the praise of having connected with his system great sincerity and zeal in its cause, together with an ardent, though mystical piety, yet it is not to be denied that he was unable to defend it. We had thought, that this mystical theory had passed away as the tale of other times, until we find principles stated, that lead to it by inevitable consequence in the writings of the Professor. Does the Professor, then, show himself in his works to be a disciple of Mallebranche? Evidently not: for neither do we find in his productions, any of that spirit of piety which breathes through the works of that venerable father, nor does his language in any part imply, that he intends to extend his doctrine farther than to exclude all causation from the events of the physical world; and as to Mr. Hume, nothing could be more remote from his views or his principles than to acknowledge the immediate action of the Creator throughout the universe. The Professor certainly does not perceive the consequences to which this doctrine of Mr. Hume, which he unwarily adopts, unavoidably conducts him. He, in one of his notes, indeed, informs us that Mallebranche deduced his conclusion from premises very nearly the same with Mr. Hume's, the fallacy of which in the extent to which it is applied, we shall soon detect; but he no where avows himself to have embraced the principles of that father.

The fallacy of Mr. Hume, on this point, consists in confounding two things that are entirely distinct, necessary connection between causes and effects, with efficiency in causes to produce their effects. We may be perfectly satisfied that a cause has power and efficiency to produce its effect, and that in the exercise of that power it operates under the influence of necessary laws, or laws over which it has no controul, without there being supposed between it and its effect, in the nature of things, such a necessary connection, that the one could not have taken place without the other. The sun gives us light and heat, and we are sure as things are now constituted there must be a power in that luminary to produce these results; but it is impossible for the mind of man to say, that these things are so inseparably united, that the infinite power and wisdom of the Creator might not have occasioned the one without the intermediation of the other. When we witness any effect, indeed, we are sure of one thing only; and that is, that there must be some cause, as this is a truth confirmed by invariable experience, and by the abstract conclusions of the understanding; but of what nature that cause is, we can derive only from observation, or, in the case of the Creator, from an examination of his works and from revelation. Neither is it possible to the human mind to determine a priori, or by any strict rules of demonstration that the efficiency which we have found in causes, in one or two or more cases, will always inhere in that collection of sensible qualities. This is a lesson to be learnt only from experience; and upon our continued experience it must rest as its foundation, as there are no abstract arguments that can minister in this case to its support or confirmation. But does this consideration render the proof less satisfactory to a reasonable mind, diminish its confidence in the stability of the order of nature, or justify the scepticism of Mr. Hume when he maintains, that we have no good ground of reasoning from the past and present to the future,

would vacate all the lessons of experience, destroy the force of the whole argument from induction, and, thereby upturn the foundation of experimental and moral science? We cannot strictly demonstrate that fire will burn us to-morrow, or water drown us, the sun rise and set, or the tides ebb and flow in our rivers; but does this consideration lessen our confidence that all these events will take place? This view of the matter will serve to explain to the Professor, what he has quoted from Dr. Barrow and others, in a note on this subject, and seems not rightly to have understood; and will convince him that that Great Philosopher and eloquent preacher, instead of agreeing with him and Mr. Hume in asserting, that there is no efficiency in natural causes, expressly recognizes in his very modes of expression an opposite doctrine. "That the object of the physical inquirer," says the Professor," is not to trace necessary connections, or to ascertain the efficient causes of phenomena (here we see to trace necessary connections, and ascertain efficient causes, are considered by Mr. Stewart equivalent expressions), is a principle which has been frequently ascribed to Mr. Hume as its author, both by his followers and his opponents; but it is in fact of a much earlier date, and has been maintained by many of the most enlightened, and the least sceptical of our modern philosophers: nor do I know that it was ever suspected to have a dangerous tendency until the publication of Mr. Hume's writings. If we except, says Dr. Barrow, the mutual causality and dependence of a mathematical demonstration, I do not think that there is any other causality, in the nature of things, wherein a necessary consequence can be founded. Logicians do indeed boast of, I do not know what kind of demonstration from external causes either efficient or final, but without being able to show one genuine example of any such; nay, I imagine it is impossible for them to do so. For there can be no such connection of an external efficient cause with its effect, through which, strictly speaking, the ef-

fect is necessarily supposed by the supposition of the efficient cause, or any determinate cause by the supposition of the effect. Therefore, there can be no argumentation from an efficient cause to the effect, or from an effect to the cause, which is strictly necessary." The observations before made, afford a sufficient key to explain this opinion of Dr. Barrow, and show that it is perfectly just and true; but at the same time instead of answering the purpose for which it was brought by the Professor, namely, to prove that causes in the natural world are not considered by Dr. Barrow as efficient causes, that it is in direct hostility to it, Dr. Barrow all along speaks of external causes as efficient or final, of demonstration from external efficient causes, thereby proving, beyond any doubt, that he considers external causes as true efficient causes. But Dr. Barrow, it is said, avows, that there can be no such connection of an external efficient cause with its effect, through which, strictly speaking, the effect is necessarily supposed by the supposition of the efficient cause, or any determinate cause by the supposition of the effect." This is true, and amounts to the doctrine we have before inculcated. That is to say, Dr. Barrow maintains, that although by an evidence satisfactory to the mind, we have ascertained that the influence of the sun and moon causes the rising and falling of the tides in our river, we cannot prove by strict demonstration or necessary consequence, that although the cause or influence of the sun and moon should subsist, it must unavoidably produce that effect, or the rising and falling of the tides in future, or, if we suppose the effect to have taken place, it must unavoidably have resulted from that determinate cause. This, no person who understands the subject will pretend to deny; and to maintain a contrary doctrine would be to confound the different degrees of evidence upon which our knowledge rests. We can no more attain to strict demonstration in the science of nature, than we should be contented with the ground on which inductive reasonings rest

in pure mathematicks. The only proof we have that the sun will rise to-morrow, and the tides flow, or that the whole course of nature may not undergo a complete change, is derived from an experience of the uniformity of its operations hitherto; and if we are not contented with this degree of proof, the Creator furnishes us with no better; and if we repose not confidence in the order of nature, until we shall prove its stability by strict and mathematical demonstration, we shall never do so.

But, if any one is inclined to think that I have given a wrong interpretation to Dr. Barrow's meaning, hear him speak further in illustration of his doctrine. In his sixth mathematical lecture, after expressing himself as has been already mentioned, he proceeds. "For every action of an efficient cause, as well as its consequent effect, depends upon the free will and power of Almighty God, who can hinder the influx and efficacy of any cause, at his pleasure; neither is there any effect so confined to one cause, but it may be produced by perhaps innumerable others. Hence it is possible that there may be such a cause without a subsequent effect, or such an effect and no peculiar cause. Because there is fire, it does not necessarily follow that there is fuel for it to feed on or smoke sent from it, since history relates that, in fact, it has happened otherwise. Neither, on the contrary, is the necessary existence of fire inferred from ashes or smoke. For who doubts but God can immediately create ashes and smoke, or produce it by other means? In like manner, from that most celebrated and trite example of a demonstration from the efficient cause which is used by Aristotle and other writers of logick, of the Earth's interposition between the sun and moon, it does not follow that the moon undergoes an Eclipse; for if God please, the Solar rays may pass through the body of the Earth, or reach the moon by an indirect passage, without touching the Earth; or otherwise the moon may be enlightened some other way. Nay, the sun itself does not

infer light; for at the death of our Lord, the setting of the better light of the world, the sun, as if struck with fear and confounded with shame, drew in his rays and hid his face, and even at noon day suffered an Eclipse without any moon to intercept his light, or any cloud to darken his brightness. A defect of light, then, cannot be concluded from the interposition of an opaque body, nor this from that. I own, according to the law and custom of nature, that such effects do always proceed from such causes; but, in reality, it is one thing to happen naturally, and another to exist of necessity. For necessary propositions have an universal, immutable and eternal truth, subject to nothing, nor to be hindered by any power. Because, therefore, the efficacy of agents may be stopped or changed, and every effect may proceed from various causes, there can be no demonstration from an efficient cause, or from an effect."

We shall conclude these strictures upon the doctrines of the Professor upon cause and effect, by briefly descanting upon his peculiarities. "In consequence of the inferences," says he, "which Mr. Hume has deduced from this doctrine concerning cause and effect, some late authors have been led to dispute its truth; not perceiving that the fallacy of Mr. Hume's system does not consist in his premises, but in the conclusion which he draws from them." This to be sure, is speaking in very complacent terms of the premises of Mr. Hume, and greatly calculated to palliate their atrocious nature in the estimation of his readers; and at the same time paying no very flattering compliment to the ingenuity of that celebrated atheist, since it implies, that he has constructed his premises with so little address, that two directly contradictory conclusions may be drawn from them, that there is a God, and that there is no God. Mr. Hume, thick as is the cloud in which he frequently chooses to involve himself, and full of jargon as is his metaphysical language, knew better than all this how to draw his readers towards his sceptical conclusions.

Which of the premises of Mr. Hume would the Professor admit, and yet avoid the force of his conclusion? Does he imagine, that all the premises of Mr. Hume are concentrated in those two propositions, we can discover no power or efficacy in causes to produce their effects, and there is no necessary connexion between effects and causes? This seems to be implied in what he remarks on this subject relative to Father Mallebranche, "this accordingly was the conclusion which Mallebranche deduced from premises very nearly the same with Mr. Hume's." The shade of that venerable and truly philosophick Father, methinks, would frown with indignation upon any one who should presume to accuse him of abetting such abominable principles as those of Mr. Hume. How easy a task to throw philosophical subjects into confusion and obscurity; how difficult the task to present them in a clear and satisfactory point of light! Let us hear Mallebranche speak for himself, and we shall then be able to discover how nearly his principles approach to Mr. Hume's*—"Il y a," says he, "bien des raisons qui m'empêchent d'attribuer aux causes secondes ou naturelles, une force, une puissance, une efficace pour produire quoi que ce soit—Mais la principale est que cette opinion ne me paroît pas même concevable. Quelq' effort que je fasse pour la comprendre, je ne puis trouver en moi d'idée qui me représente ce que ce peut-être que la force ou la puissance qu'on attribue aux créatures. Et je ne crois pas même faire de jugement téméraire d'assurer qui soutiennent que les créatures sont en elles-mêmes de la force et de la puissance, avancent ce qu'ils ne conçoivent point clairement. Car, enfin, si les philosophes concevoient clairement que les causes secondes ont une véritable force pour agir et pour produire leur semblable, étant homme aussi bien qu'eux et participant comme eux à la souveraine raison; je pourrois apparemment découvrir l'idée qui leur re-

* Book 6, part 2, ch. 3. Touchant l'efficace attribuées aux causes secondes.

presente cette force. Mais quelq' effort d'esprit que je fasse, je ne puis trouver de force, d'efficace, de puissance, que dans la volonte de l'etre infiniment parfait." Again, he says, " Mais non seulement les hommes ne sont point les veritables causes des mouvemens qu'ils produisent dans leur corps, il semble meme qu'il y ait contradiction qu'ils puissent l'etre. Cause veritable, est une cause entre laquelle et son effet l'esprit apperçoit une liaison necessaire, c'est ainsi que je l'entens. Or, il n'y a que l'etre infiniment parfait, entre la volonte du quel et ses effets l'esprit apperçoive une liaison necessaire. Il n'y a donc que Dieu qui soit veritable cause, et qui ait veritablement la puissance de mouvoir les corps. Je dis de plus, qu'il n'est pas concevable que Dieu puisse communiquer aux hommes ou aux Anges la puissance, qu'il a de remuer les corps: et que ceux qui pretendent, que le pouvoir que nous avons de remuer nos bras, est une veritable puissance, doivent avouer que Dieu peut aussi donner aux esprits la puissance de creer, d'anneantir, de faire toutes les choses possibles; et en un mot, qu'il peut les rendre tout-puissans." However indefensible we may deem the principles of Mallebranche, and the extravagant and absurd lengths to which he extends them, render their refutation altogether superfluous, we cannot but perceive the very essential and important distinction between them, and those which are maintained by Mr. Hume. Those of the one, introduce God as immediately and constantly operating throughout the whole structure and course of nature; those of the other totally exclude him, and lead to a denial of his being and providence. You cannot admit the premises of Mallebranche, without allowing his conclusion, neither can you those of Hume. And what are the points which constitute this essential distinction? They are the following—Mallebranche cannot discover an idea which represents to him any force, efficacy or power in finite beings, and can clearly conceive of these as subsisting only in the will of a perfect Being. Mr. Hume denies, that

we have any idea of power or efficacy in any being whatever. Mallebranche defines a true cause to be a cause, between which and its effect, the mind perceives a necessary connection, (*une liaison necessaire*) and asserts that this necessary connection can subsist only between God and the universe; Mr. Hume gives the same definition of a cause, but supposes that this necessary connection can in no case be perceived. Mallebranche confines all efficiency to one sole cause; but Hume maintains that we have no reason to conclude that there is any efficiency in any cause whatever, and reduces us to the necessity of admitting an eternal succession of objects. Mallebranche recognises in the very structure of his argument the immutable truth, that for every effect there must be a cause, but concludes that this cause in all cases is God alone; Hume denies the truth of that maxim, and endeavours to demonstrate that we have no good reason to admit it, and of course uproots the very foundation of the argument in proof of a God. So little ground, therefore, is there for the representation of the Professor, that the conclusions of the one are deduced from premises very nearly the same with those of the other! They are as widely different from each other, as the principles of a mistaken and mystical theism can be from those of a rank and unblushing atheism.

The account which the professor gives of "that bias of the mind," which leads us to conceive that physical events are, somehow linked together, and that material substances are possessed of certain powers and virtues which fit them to produce particular effects, is really a philosophical curiosity, and on this account alone worthy of insertion here. "It is a curious question," says he, "what gives rise to this prejudice? In stating the argument for the existence of the Deity several modern philosophers have been at pains to illustrate that law of our nature, which leads us to refer every change we perceive to the operation of an efficient cause. This refer-

ence is not the result of reasoning, but necessarily accompanies the perception, so as to render it impossible for us to see the change without feeling a conviction of the operation of some cause by which it was produced; much in the same manner, in which we find it impossible to conceive a sensation without being impressed with a belief of the existence of a sentient Being. Hence, I apprehend it is, that when we see two events constantly conjoined, we are led to associate the idea of causation or efficiency with the former, and to refer to it that power or energy by which the change was produced; in consequence of which association we come to consider philosophy as a knowledge of efficient causes, and lose sight of the operation of mind in producing the phenomena of nature. It is by an association somewhat similar, that we connect our sensation of colour with the primary qualities of body. A moment's reflection must satisfy any one, that the sensation of colour can only reside in the mind (by the by, it took philosophers some time and study to discover this); and yet our natural bias is surely to connect colour with extension and figure, and to conceive white, blue, yellow as something spread over the surfaces of body. In the same way we are led to associate with inanimate matter the ideas of power, force, energy and causation, which are all attributes of mind."

By those persons who read merely for amusement, and who are entirely satisfied, if they find in the author, whose pages they are perusing, sounding phrases and well turned periods; and who, when they cannot comprehend his meaning from the obscurity of his illustrations, imagine it to be very profound for that very reason, this account of the phenomenon supposed to exist, and attempted to be explained, may be deemed satisfactory. But to those whose province it is to study and understand what they read, and develop, faithfully and truly, the operations of nature, never surely could there be presented a specimen of a more abortive at-

tempt to philosophise. To make good our assertions, let us examine, for a moment, the solution here attempted to be furnished of a phenomenon in the moral world. These writers of the late school of metaphysicks, having discovered in the structure of our nature an instinct perspicacious enough to induce us to refer every effect to an efficient cause, and moreover to penetrate into the deep and mysterious doctrine, that mind alone can be the efficient cause of any thing; have now to explain by what bias or prejudice it is, that when we approach the fire, we are so childish as to conclude that there is any power in fire to produce in us the sensation of heat, instead of referring the sensation at once to mind, the real cause. Mark now, the solution; although I am afraid it will not be found so satisfactory as that of Gallileo above referred to. From finding that fire and our sensation of heat are always conjoined together, we associate the idea of power in fire with that element, as we do sensation with the existence of a sentient Being; or as we do colours, for instance, white, blue, yellow, with the primary qualities of body as extension, figure, solidity, &c." Such is the solution, which is certainly entirely original; and if any one feels disposed to be satisfied with it, we have only to recommend to him, to pore over the pages of Newton, Locke, Bacon and Clarke, and he will learn to repudiate fruitless disquisitions.

We have only one single view more to take of the doctrines of the Professor on cause and effect, and we have done; but this view is a very serious one. We may be thought singular in our opinion, but we do not hesitate to consider his doctrines upon this point, as having a portentous aspect towards religion and morality, and verging strongly towards atheism. The immediate reference of all the phenomena of nature in the physical world to the agency of mind or the Supreme Being, spreads over his system a specious appearance of truth and orthodoxy, but it is only

a specious appearance, and delusive. We will not say that atheism was ever intended to be inculcated by the Professor, although we cannot relish the very favourable and softened terms in which he always refers to the principles of Mr. Hume. Independently of this consideration, however, we do assert, that the ground taken by him is a very dangerous one, and that his system carries in its bosom the seeds of its own speedy destruction; and if confided in, in its ruins might be buried the interests of those truths to which it ostensibly essays to extend a feeble and ineffectual support. He admits in their utmost extent the premises of Mr. Hume; avowing that the fallacy of his argument does not consist in his premises, but in the conclusions which he draws from them. He adopts, to all intents and purposes, the principles of Mr. Hume, as far as relates to the physical world; and maintains, that we have no reason to believe that there are any such things as efficient causes to be found in it. We have already shown that, by parity of reasoning, we may deny all efficacy in all moral causes, save the Deity alone. He allows that Mr. Hume has shown that the maxim, for every effect in nature there must be a cause, can be proved neither from intuition, reason, or experience; and asserts, that we derive it solely from an instinctive and original principle in the constitution of our nature. The whole foundation of the argument, upon which is constructed the infinitely important truth of the existence of God, is thus made to rest upon the evidence we derive from this single instinct. All, therefore, that is left to the Atheist, is the easy task of proving, that we are possessed of no such instinctive principle, and his mighty fabrick of pretended theism crumbles to dust and confusion. Never surely was a wider door thrown open, by those who pretend to be the champions of theism, for the admission of atheistical principles. To make such broad concessions to the enemies of truth, and yet expect to retain the infinitely important doctrine of the Being of a God, ap-

pears to us, like expecting to sustain the superstructure, after we have allowed the foundation to be demolished. And yet we find the Professor, as if totally unapprised of the dangerous tendency of his own doctrine, expressing himself in the following language. "For however important," says he, "the positive advantages may be, which are to be expected from the future progress of metaphysical science, they are by no means so essential to human improvement and happiness, as a satisfactory refutation of that sceptical philosophy which struck at the root of all knowledge and belief. Such a refutation seems to have been the principal object which Dr. Reid proposed to himself in his metaphysical inquiries, and to this object his labours have been directed with so much ability, candour, and perseverance, that, unless future scepticks should occupy a ground very different from that of their predecessors, it is not likely that the controversy will be ever renewed." From the sentiment expressed in the concluding part of this paragraph, we crave leave entirely to dissent. The controversy with scepticks, it is true, has been removed from the ground on which it was formerly maintained, and with triumphant success; but we cannot withhold the opinion, that it has been removed from a place of safety to that of extreme danger, where it is protected by very insufficient guards and fortifications; and we must still be excused for giving a decided preference to enlisting under the banners and submitting to the guidance of such men as Locke, Clarke, Mallebranche and Des Cartes, to any of those who have succeeded them, and have undertaken the task of filling the world with an account of their errors and miscarriages.*

* Thomas Brown, M. D. professor of moral philosophy in the University of Edinburgh, carries the principles of Mr. Stewart to their ultimate excess. He says, that when we use the term power, we as much make use of a term without any idea annexed to it, as the Peripateticks did when they spoke of substantial forms and occult qualities. He affirms

We cannot take leave of this subject of cause and effect, in language more expressive of the sentiments we entertain, than is that of Mr. Locke, in his reply to the unintelligible jargon of Mr. Norris, a follower of Mallebranche. "Whether the ideas of light and colour come in by the eye or no; it is all one as if they did, for those who have no eyes, never have them. And whether or no God has appointed that a certain modified motion of the fibres, or spirits in the optic nerve, should excite or produce, or cause them in us, call it what you please, it is all one as if it did; since where there is no such motion, there is no such perception or idea. For I hope they will not deny God the privilege to give such a power to motion, if he pleases. "Yes," say they, "they be the occasional but not the efficient cause, for that they cannot be, because that is in effect to say, he has given this motion in the optic nerve a power to operate on himself, but cannot give it a power to operate on the mind of man. It may by this appointment operate on himself, the impassible infinite Spirit, and put him in mind when he is to operate on the mind of man, and exhibit to it the idea which is in himself of any colour. The Infinite Eternal God is certainly the cause of all things, the fountain of all being and power. But because all being was from him, can there be nothing but God himself? Or because all power was originally in him, can there be nothing of it communicated to his creatures? This is to set very narrow bounds to the power of God, and by pretending to extend it, takes it away. For which, I beseech you, as we can comprehend, is the greatest power; to make a machine, a

that what can be meant by power, is only immediate invariable antecedence. He defines cause to be the immediate invariable antecedent in any sequence; while the immediate invariable consequent is the correlative effect. Upon the principles of Dr. Brown, we should soon see all the ridiculous jargon of the schools revived. Never surely since the days of the Schoolmen have there been published such works as his upon any philosophical subject.

watch for example, that when the watchman has withdrawn his hands, shall go and strike by the fit contrivance of the parts; or else requires that whenever the hand by pointing to the hour, minds him of it, he should strike twelve upon the bell? No machine of God's making can go of itself. Why? Because the creatures have no power, can neither move themselves nor any thing else. How, then, comes about all that we see? Do they do nothing? Yes—they are occasional causes to God, why he should produce certain thoughts and motions in them. The creatures cannot produce any idea or thought in man. How, then, comes he to perceive or to think? God, upon the occasion of some motion in the optic nerve, exhibits the colour of a marygold or a rose to his mind. How came that motion in his optic nerve? On occasion of the motion of some particles of light striking on the retina, God producing it, and so on. And so, whatever a man thinks, God produces the thought, let it be infidelity, murmuring or blasphemy. The mind doth nothing—his mind is only the mirror that receives the ideas that God exhibits to it, and just as God exhibits them. The man is altogether passive in the whole business of thinking. A man cannot move his arm or his tongue; he has no power; only upon occasion the man willing it, God moves it. The man wills, he doth something; or else God upon the occasion of something he did before, produced the will and this action in him. This is the hypothesis that clears all doubts, and brings us at last to the religion of Hobbes and Spinoza, by resolving all, even the thoughts and will of men, into an irresistible fatal necessity. For whether the original of it be from the continued motion of eternal, all-doing matter, or from an omnipotent immaterial Being, who having begun matter and motion, continues it by the direction of occasions which he himself has also made; as to religion and morality, it is just the same thing. But we must know how every thing is brought to pass, and thus we have it resolved without leaving any difficulty to perplex us. But,

perhaps, it would better become us to acknowledge our ignorance, than to talk such things boldly of the Holy One of Israel, and condemn others for not daring to be as unman-nerly as ourselves."

END OF BOOK FIRST,

BOOK II.—CHAPTER I.

What is meant by solving a Phenomenon in Nature.

IN treating so fully of the subject of cause and effect, we have already communicated our views of what is meant by solving a phenomenon in nature. Any appearance may be regarded as completely explained, as far as the human mind is competent to explain it, when it is referred to the operation of some cause adequate to its production, and when the law or laws under which that cause acted have been ascertained. Thus we say the sun is the cause of light and fire of heat, the sun and moon of the tides and the electric fluid of lightning. A phenomenon may be considered as partially explained, although it may be sufficiently for all practical purposes, when the law or laws are ascertained by which some unknown cause acts, although the cause itself remains in impenetrable obscurity. Thus the laws of that principle which causes attraction have been ascertained, and all the appearances of the heavenly bodies explained, although the cause itself, as yet, remains hidden. The phenomena and the laws relative to the Gulf-stream upon our Atlantic coast, are all understood, although the cause of that singular marine flood has never been assigned, at least a cause that can be considered as competent to the effect; and thus the laws or func-

tions of animal life may all be developed to medical science, while the cause of life is a secret, and perhaps will always remain a secret, except to him who communicates and preserves it.

CHAPTER II.

Of Metaphysical Science.

THE way is now prepared for entering upon the great subject of our investigation, the Science of the Human Mind. The first labourer whose name has been conveyed to us as having toiled in this field with any success, was Aristotle. The Schoolmen appear to have misinterpreted and abused his doctrines; and literally translating his words, without rightly comprehending his meaning, substituted learned terms for things; and instead of devoting their attention to the interpretation of nature, contented themselves with exercising their intellectual strength and adroitness, by carrying on an idle and useless war of words with each other. Des Cartes and Mallebranche afterwards, throwing off the shackles of the school-philosophy, and deeply sensible of its utter incompetency to the search and discovery of truth, improved upon the labours of Aristotle, and greatly contributed to the advancement of this branch of science. The philosopher, however, to whom this branch of human knowledge is more indebted than all others united, who may emphatically be regarded as its father, and the great metaphysician of human nature, is the inimitable Mr. Locke. Most deservedly is he considered as holding the same rank in metaphysical science, or science of mind, as Newton does in natural philosophy. By the votaries of these sciences, and those who have taken the pains to study and comprehend them, neither of these names can be remembered but with enthusiasm. What undiscovered countries have they laid open to us, where the richest

fruits grow, and the most precious treasures are accumulated! It is somewhat singular that the Scottish metaphysicians alone, while they do, indeed, occasionally bestow a passing tribute of respect upon the great English metaphysician, which his extraordinary merit could not but extort from them, appear to be, for the most part, untouched with a sense of his pre-eminent claims to superiority, and not unfrequently indulge themselves in speaking in direct disparagement of his pretensions. They seem to have been actuated by a spirit not unlike that ascribed by lord Bacon to Aristotle, when he says of him, that like a Turkish sultan, in order to establish safely his own dominion in philosophy, he thought it necessary to destroy his competitors and rivals. Into what diminutive forms do Locke, Des Cartes, Mallebranche sink, in the writings of Reid, Beattie and Stewart! They had the happiness, indeed, to be the broachers of a new theory, and explore a territory before unknown, but that theory was false, and pregnant with ruin to science and common sense; and in that new territory, which they discovered, they only lost themselves in the mazes of error, while the soil was left uncultivated and encumbered with rubbish. Hear in what terms Dr. Reid, in the commencement of his metaphysical essays, speaks of the low and imperfect state in which he found the science of the human mind in his time, so long after the publication of Mr. Locke's book. "That our philosophy concerning the mind and its faculties is but in a very low state may be reasonably conjectured even by those who have never very narrowly examined it." He says, "this philosophy is yet in its dawn; that the lame and imperfect systems which have prevailed only open the way to future discoveries," descants upon those defects and blemishes in them, which have exposed them to the ridicule of sensible men, "upon the unprosperous state of this part of philosophy, which hath produced an effect somewhat discouraging, but

an effect which might be expected, and which time only and better success can remedy, upon the theory prevalent about the human mind having led, like an ignis fatuus, into bogs and quagmires, having contradicted herself, befooled her votaries and deprived them of every object worthy to be pursued or enjoyed, and being herself worthy to be sent back to the infernal regions from which she must have had her original." This, the reader must recollect, is an account, not only of the intellectual fooleries and sceptical impieties of Mr. Hume, or even the metaphysical subtleties of Bishop Berkeley, in which we should be willing to indulge him in any freedom and severity of animadversion, but also of the sublime philosophy of Aristotle and of Locke. Who that has read and understood the works of the illustrious Englishman, does not feel indignant at such a representation! Should any one presume to speak in this style of the discoveries of Newton in natural science; what would be the sentence pronounced upon him by the philosophic world! We may rest assured that it is no less egregiously false, as it relates to Mr. Locke and the science of metaphysics. While Dr. Reid, however, speaks thus disparagingly of the labours of preceding philosophers, to save us from utter despair in this matter, he takes care to console us with holding out the prospect of more auspicious times, and scarcely leaves us in any doubt as to the quarter from whence light was to arise. "But," says he, "instead of despising the dawn of light, we ought rather to hope for its increase; instead of blaming the philosophers, I have mentioned, for the defects and blemishes of their system, we ought rather to honour their memories as the discoverers of a region in philosophy formerly unknown; and however lame and imperfect the system may be, they have opened the way to future discoveries which they did not reach, or the detection of errors in which they were entangled." Again he says—"These facts which are undeniable,

do, indeed, give reason to apprehend that Des Cartes' system of the human understanding, which I shall beg leave to call the ideal system, and which with some improvements made by later writers, is now generally received, hath some original defect; that scepticism is inlaid in it; and therefore, that we must lay it open to the foundation, and examine the materials, before we can expect to raise any solid and useful fabric of knowledge on this subject. But is this to be despaired of, because Des Cartes and his followers have failed? by no means—Useful discoveries are sometimes, indeed, the effect of superior genius, but more frequently they are the birth of time and of accidents." No language could surely be more intelligible than this. We are thus artfully prepared to expect some great discoveries. What Dr. Reid, however, thus covertly insinuates, we find professor Stewart openly and boldly proclaiming. He too, tells us, "of the little progress hitherto made in the science of the human mind, of the errors and absurdities maintained on this subject, a subject to which, till of late, it does not seem to have been suspected, that the general rules of philosophising, are applicable; and that the strange mixture of fact and hypothesis, which the greater part of metaphysical inquiries exhibit, had led almost universally to a belief, that it is only a very faint and doubtful light, which human reason can ever expect to throw on this dark but interesting field of speculation." Again he tells us—"When we reflect, in this manner, on the shortness of the period during which natural philosophy has been successfully cultivated, and at the same time consider how open to our examination the laws of matter are, in comparison of those which regulate the phenomena of thought, we shall neither be disposed to wonder, that the philosophy of mind should still remain in its infancy, nor be discouraged in our hopes concerning its future progress. The excellent models of this species of investigation,

which the writings of Dr. Reid exhibit, give us ground to expect that the time is not far distant, when it shall assume that rank which it is entitled to hold among the sciences." Here we see that Aristotle, Des Cartes, Mallebranche, Locke, are diminutive stars that twinkle for a moment and shed a dubious light, but expire as soon as Dr. Reid, the great luminary of moral science appears. Those illustrious men who lived a century ago in England, and who by the labours of their genius have reflected upon her immortal honour, were weak enough to think that their countryman Mr. Locke had raised metaphysicks to the dignity of a science, and more successfully than any other man that ever lived, had solved the phenomena of the human mind; but professor Stewart has discovered that this high honour was reserved for Dr. Reid. The professor also here mentions what he takes frequent opportunities to repeat, that Dr. Reid was the first who applied the method of inquiry proposed by lord Bacon to the science of the human mind. "Dr. Reid," he avows, "is the only metaphysician who has perceived it clearly, or at least who has kept it steadily in view in all his inquiries." Now, a more unfounded, and I trust, I shall be indulged in saying, when I shall have fully examined the subject, a more unjustifiable pretension was never made. The *Treatise on Human Understanding*, modest as is its title, besides being, as a production of genius, second only to the *Principia* of Newton, if it can justly be considered as second to any thing; is one of the finest specimens of inductive reasoning extant in any language. The precise purpose of Mr. Locke, and a purpose which he completely accomplished, was to apply the principles of lord Bacon to the science of mind, as Newton applied them to matter.

But to conclude my account of the arrogant pretensions of these men. "It is, however, much to be regretted," says professor Stewart, "that ever since the period when philo-

sophers began to adopt a more rational plan of inquiry with respect to such subjects, they have been obliged to spend so much of their time in clearing away the rubbish, which had been collected by their predecessors. This, indeed, was a preliminary step which the state of the science, and the conclusions to which it had led, rendered absolutely necessary. The rubbish being now removed and the foundations laid, it is time to begin the superstructure. The progress which I have made in it, is, I am sensible very inconsiderable; yet I flatter myself that the little I have done will be sufficient to illustrate the importance of the study, and recommend the subjects of which I am to treat to the attention of others.” Here we are very plainly told, that Dr. Reid having removed the rubbish collected in metaphysical science by Des Cartes, Mallebranche, Locke and others, some great architect or master-builder, (and we are not left at a loss to conjecture who that architect is to be, although, I suspect, the Dr. would controvert that claim with his disciple the professor,) is to erect the superstructure. These, it must be allowed are magnificent pretensions, and it shall be our province to test their validity. We have already seen what a quantity of rubbish has been removed by these master-builders from the subject of cause and effect; and I am inclined to think that their labours are likely to be found in other matters to terminate in a similar result. We do not hesitate to declare, that we entertain not the smallest doubt of our being able to show, to the entire satisfaction of the learned and philosophic world, that these pretensions are founded in mistake and an ignorance of the subject; that Mr. Locke ought still to be regarded as the brightest light of metaphysical science; that his doctrines, with some few exceptions that are inconsiderable, when rightly understood, never have been and never can be refuted; that not one sceptical objection has been removed by a theory different from his, that could not have

been refuted upon his principles, and moreover, that no discovery of importance has been made since his time; and if we wish that the science of the human mind should be cultivated with advantage, we must commence in it at the point in which he terminated, and erect our superstructure upon his foundation. These assertions we trust we shall be able to prove by satisfactory arguments.

CHAPTER III.

Of Perception.

THE first in order of the phenomena of the human mind, is perception; by which term is meant that power, by means of which we hold converse with the external world, and the operations of our own minds. Perception, like almost all terms of a similar nature, sometimes denotes the power and sometimes the acts of that power, by which we discern the external and internal objects of contemplation. It is a generic term, including two species under it, sensation and reflection; sensation, by which we become acquainted with the qualities and operations of the exterior world, and reflection or consciousness, by which we become acquainted with the properties and operations of our own minds. We are said to have perceptions of colour, figure, motion, hardness, and in like manner of thinking, doubting, hoping, believing and fearing, which are acts of the mind. By sensation, we obtain our ideas of all the primary and secondary qualities of body: the first of which are figure, hardness, extension, motion, rest; and the second, colour, heat, cold, sweetness, sound and such like. By primary qualities Des Cartes and Locke mean those which belong to bodies, whether we perceive them or not; by secondary those which cannot properly be said to be in the bodies themselves, but are only sensations in us excited by certain powers existing in exterior objects. Sensation and reflection, therefore, according to Mr. Locke, who may be considered as the original author of this theory, since none of the philosophers who preceded him appear to have had any distinct knowledge of it, are the two great and sole inlets of human knowledge. Through these

two channels we obtain all our simple ideas, which are the elementary principles out of which the busy and curious mind of man forms an endless diversity of combinations. As to the process, by which ideas of the external world are excited in us, Mr. Locke says very little; but as the faithful Interpreter of nature, whose province is to trace her secret operations, as far as the limited faculties bestowed upon our race admit, he maintains, that those ideas can be produced in us only by impulse or the action of outward objects upon the senses: as in taste, by the actual contact of sapid substances with the tongue and palate, in smelling the odorous effluvia emitted from substances striking upon the nostril, in hearing, the vibrations of air upon the ear, and in seeing, the impinging of the rays of light, that pass from the object upon the retina of the eye. How it happens that this action upon the outward organ, occasions perception in any case; that the formation of an image upon the retina, for instance, renders objects visible to us, is considered by the most profound philosophers, as utterly unsearchable to the human mind. Facts without number may be adduced to show, that in order to distinct vision, an image must be formed upon the retina, and moreover, that the action produced in the nervous coat at the bottom of the eye must be communicated by the nerves leading to the brain, to that *membrane*, usually regarded as the common sensorium. So far the doctrine of philosophers is substantiated by experiment and observation. For, if from any cause, as a disorder in the membranes of the eye or any discoloration of its humours, no distinct image be thrown upon the retina, or if from any defect in the system of nerves leading from the bottom of the eye to the brain, the necessary motion, or action, to be transmitted to the common sensorium be intercepted, the object is not perceived.

Further than this, however, a sound philosophy does not pretend to conduct us into the mysteries of nature. Whether the action produced in the nervous coat be longitudinal or vibratory, how it happens that any motions excited in a system of nerves should produce ideas in our minds, or what is the nature of our ideas; no philosophers, who have just conceptions of the limited sphere of human knowledge, have ever undertaken to determine. Such disquisitions were reserved solely to exercise the ingenuity and excite the literary hostilities of the Schoolmen, who in their contests with each other, entirely lost sight of nature, and were contented with gaining the palm of victory, by the dexterous employment of learned terms, to which they themselves annexed no precise meanings.

Having thus briefly stated the principles of Mr. Locke and the Philosophers, the task which now devolves upon us is to vindicate this system from the objections which have been alledged against it by Dr. Reid. This author admits "that we perceive no external object but by means of certain bodily organs God has given us for that purpose." This he could not deny; since it is incontrovertibly proved by the fact, that a man born blind can have no ideas of colour, one deprived of hearing has no ideas of sounds, and that the same result takes place in case of a deficiency in the other senses; there is a want of that train of ideas introduced by them. He allows also, that "there is sufficient reason to conclude, that in perception the object produces some change in the organ; the organ produces some change upon the nerve; and the nerve produces some change in the brain." In these particulars he exactly agrees with Mr. Locke and the Philosophers. But the first point in their doctrine which he thinks objectionable; and upon account of which he separates from them, is, that "without good reason, they have concluded that the impressions made upon the body are the proper efficient cause of perception." "Some Philosophers," he continues, "among

the ancients, as well as among the moderns, imagined that man is nothing but a piece of matter so curiously organized, that the impressions of external objects produce in it sensation, perception, remembrance, and all the other operations we are conscious of. This foolish opinion could only take its rise, from observing the constant connection which the author of nature hath established between certain impressions made upon the senses, and our perception of the objects by which the impression is made; from which they weakly inferred that those impressions were the proper efficient causes of the corresponding perceptions. There is, indeed, nothing more ridiculous than to imagine that any motion or modification of matter should produce thought. If any one should tell of a telescope so exactly made as to have the power of seeing; of a whispering gallery so formed as to have the power of hearing; of a cabinet so nicely framed as to have the power of memory; or of a machine so delicate as to feel pain when it is touched; such absurdities are so shocking to common sense, that they would not find belief even among Savages. Yet it is the same absurdity to think that the impressions of external objects upon the machine of our bodies, can be the real efficient cause of thought and perception." Perhaps never was there greater confusion of ideas than is discovered in this passage. We begin our strictures upon it by remarking, that it is consistent in Dr. Reid to deny that any action of the bodily organs can be the real efficient cause of perception; since according to his own principles before stated, matter cannot be the efficient cause of any thing; and of course he ought to deny that the several media which operate upon the senses, in smelling, tasting, seeing or hearing, can be the efficient cause of any action even in the nerves themselves; as, for instance, that light can be the efficient cause of the image upon the retina. But he does not choose to rest his objection upon this ground. He endeavours to confound with materialists those who maintain, that the ac-

tion of outward objects upon the senses, and through their instrumentality upon the mind, may be the efficient cause of perception. Now surely his ideas must be confused, indeed, who does not perceive that there is no connection between this doctrine and materialism. Can any one deny that the mind and body reciprocally act upon each other? What are the mysterious ties that unite them, and what is the mode by which they operate upon one another, the deepest philosophy has never been able to ascertain; but nothing can be more certain than the fact, that they do produce effects upon each other, sometimes the body upon the mind, and at other times the mind upon the body. When a sword cuts the body, does it not cause pain in the mind, and is not the sword the efficient cause of that pain, operating upon the sentient principle within through the instrumentality of the external organs of sense? Where then is the difficulty in supposing that the rays of light acting upon the nervous coat of the eye and brain, are the efficient cause of vision? Dr. Reid has been guilty in this statement of a most egregious blunder. He makes materialism, or what is equivalent to materialism, to consist in maintaining that the action of outward objects upon the senses and through them upon the mind, is the efficient cause of thought, whereas it really consists in making thought the result of that action upon the bodily organs alone. The essence of materialism lies in making all our perceptions, thoughts and feelings, mere modes of motion, in the different bodily organs. The doctrine, however, of Mr. Locke and the best Philosophers, is not, as the Dr. says, that any motion or modification of matter can, of itself, without being connected with an immaterial principle, produce thought; for they concur in the opinion that if it be not as is asserted ridiculous, it is at any rate inconceivable; but that the soul and body being intimately united together, sympathise in all the alterations and modifications of each other; mutually act and re-act upon one another; at one time the one as a cause

producing an effect upon the other, and vice versa. As to the manner or *modus operandi* in which they produce these effects, we are entirely in the dark, and likely ever to remain so. But is not the manner in which the intelligent principle within produces any effects upon the body equally as unsearchable, and even inconceivable, as the manner in which the body can operate upon the soul? A man receives a wound in his limb which gives pain to his mind; a delicate woman receives intelligence of the sudden death of a friend, and faints away; now, is there any more difficulty in our conceiving of the violence done to the outward organs as conveying pain to the mind by a mysterious action upon it, than that the sudden emotion of grief, which is a sentiment of the mind, should produce such a relaxation of the muscles of the body and remission of the functions of the whole system, as to occasion a person to faint? Yet the Dr. says, "it is the same absurdity to suppose, that the impressions of external objects upon the senses and through them upon the mind, are the efficient cause of perception, as to imagine a telescope so exactly made as to have the power of seeing, a whispering gallery that has the power of hearing, a cabinet so nicely framed as to have the power of memory, or a machine so delicate as to feel pain." And yet he who thus confounds together things so evidently distinct, is the writer who has detected the errors and exposed the theory of that nicely discriminating mind and true light of science, the great metaphysician of England! These are the errors and absurdities into which we are led by materialism, but have nothing to do with the maxims of a sound and just philosophy.

Let us, now, state the argument upon which we ground the conclusion, that the several media which act upon the senses, and furnish us with our information concerning their several objects, are the real efficient causes of perceptions in the mind. "This foolish opinion," says Dr. Reid, "could only have taken its rise from observing the constant connec-

tion, which the author of nature hath established between certain impressions made upon the senses, and our perception of the objects by which the impression is made; from which they weakly inferred, that those impressions were the proper and efficient causes of the corresponding perception." The foolish opinion, of which the Dr. speaks in the commencement of this sentence, was that of Aristotle, Des Cartes and Locke, all of whom considered the qualities of bodies as the causes of sensations in us. They did not draw this inference, however, solely from observing the constant connection established by the author of nature, between certain impressions made upon the senses and our perception of the objects by which such impressions are made; but from a thorough conviction resting upon facts, that besides the invariable connection between the presentation of an object to the senses and the correspondent perception, there must be a power in the cause adequate to produce the result. This inference they conceived themselves as not drawing weakly, but by as strong a cord of argument, as that by which they could, in any other case whatever, infer the cause from its effect. They knew nothing of that shallow philosophy, and idle jargon of words, which would resolve the whole relation of cause and effect into the constant contiguity and conjunction of objects; and make the whole business of natural science to consist, in tracing connections between signs and the things signified by them, introduced into the recent school of metaphysicks.

Let us, then, proceed to the consideration of the question, why we conclude, that the action of outward objects upon the senses and the organs of sense upon the mind, is the real and efficient cause of perception? The case would seem to be extremely clear and intelligible, if not embarrassed by metaphysical subtilty. There is not a single circumstance which can be mentioned, in any instance, that indicates the existence and agency of a cause which may not be recogni-

zed in this. Take the example of vision by way of illustration, as every conclusion which can be deduced from nature as applicable to the one sense, will be found equally applicable to the others. We say that the rays of light passing from the object and converging towards a point, forming an image upon the retina, and producing an action in the nervous coat, and the brain, is the efficient cause of our seeing. The arguments, by which we prove this proposition, are, that unless an object is presented in a proper light and position, and the organs of vision be in a sound state, there is no perception; that in a good state of the organ and proper position of the object there is invariably vision; and moreover, to render the reasoning conclusive, they who are deprived of sight are entirely destitute of that assemblage of ideas obtained by the exercise of this sense. Could we desire more satisfactory proof of any point than we have of this? What possible circumstances can in any case determine the existence of a cause which cannot be discovered here? Dr. Reid allows, that an image is always formed upon the retina by the rays of light, and that the formation of this image is necessary to distinct vision. Now, how can he prove that this image is invariably spread upon the retina, and that it is necessary to vision; but from the consideration, that whenever an object is presented to the organ in a proper light, the formation of this image is the necessary result, and that whenever this image is formed vision is the result? Constant conjunction and contiguity, although they by no means comprise the whole of our idea of the relation between cause and effect, certainly serve, for the most part, as a tolerably sure criterion by which to ascertain the existence of such relation between two objects. Now, it is evident that every argument which can be adduced to prove that the rays of light are the cause of the image formed at the bottom of the eye, may be made use of to prove also, that the action produced upon the nervous coat connected with the brain is the effi-

cient cause of vision, or the perception of the objects of sight. And if it were not intended by the Creator that this should be the process by which vision is effected, whence that exquisite structure of the organ itself, its appurtenances, its humours, its membranes, its muscles, and its whole form so wonderfully contrived to accomplish the great purpose for which it was intended? Would not all this wonderful array of parts; these curious contrivances and complicated machinery, appear to answer no important end, unless it was intended to be the instrument of vision? If mind alone can act in vision as an efficient cause, and matter be so utterly unimportant, why would not any lump of dead, unorganised matter have answered the purpose as well as such a nicely adjusted optical instrument?

But since Dr. Reid denies, that the several media which act upon the senses, and through them upon the mind, are the efficient causes of perception; let us put to him the inquiry what is the efficient cause? Mind, he would say—What, then, has matter to do in the affair? “It acts,” says he, “only as an occasional cause.” Thus we are plunged at once into the dark profound of the theory of Mallebranche, where our faculties are lost and absorbed in an impenetrable mysticism. An occasional cause, which possesses no power to produce its effect, is a non-descript kind of thing, which no one has ever yet been able to render intelligible, or ever will be able. But as Mr. Locke has before, in an extract which we took from him, sufficiently exposed the folly and absurdity of the doctrine of occasional causes, we forbear indulging ourselves in any further reflections upon the subject.

The next objection urged by Dr. Reid against the doctrine of Mr. Locke, which we have before stated, is in the following terms. “Another conclusion very generally made by philosophers, is, that in perception, an impression is made upon the mind, as well as upon the organ, nerves and brain. Aristotle thought, that the form or image of the object perceived,

enters by the organ of sense, and strikes upon the mind. Mr. Hume gives the name of impressions to all our perceptions, to all our sensations, and even to the objects which we perceive. Mr. Locke affirms very positively, that the ideas of external objects are produced in our minds by impulse, "that being the only way we can conceive bodies to operate in. It ought, however, to be observed in justice to Mr. Locke, that he retracted this notion in his first letter to the Bishop of Worcester, and promised, in the next edition of his essay, to have that passage rectified; but, either from forgetfulness in the author, or negligence in the printer, the passage remains in all the subsequent editions I have seen." In answer to these allegations, we deny the fact, that Mr. Locke, Aristotle, or any of the best philosophers maintained, that in perception, an impression is made upon the mind as well as upon the organ and brain, in the sense in which that doctrine is attributed to them. We shall afterwards have occasion to show, that Aristotle held no such absurd opinion as is here ascribed to him; that the image of the object perceived enters by the organ of sense and strikes upon the mind. Such a crude and ridiculous notion could never have entered into so clear a head as that of the Greek philosopher; but was a child that sprang naturally from the loins of his miserable interpreters and falsifiers, the fraternity of schoolmen. When Dr. Reid affirms, that Mr. Locke positively maintains, that the ideas of external objects are produced in our minds by impulse, that being the only way we can conceive bodies to operate in; it shows how extremely careless he is, in his references to that author, and how indifferent to the ascertaining of his true opinions. If he had recurred to the passage of Mr. Locke, and had possessed any of that candour and liberality which is the true spirit of philosophy, he could not but have perceived that, in the paragraph quoted from him, he is speaking, not of any action produced upon the mind by outward objects, but of the impression

made by them upon the organs of sense. He is inculcating there, the very same doctrine held by Aristotle in regard to the operation of the qualities of bodies upon the senses, in which they are said to make impressions upon them as a seal does upon wax. Hear Mr. Locke himself—"The next thing to be considered, is; how bodies produce ideas in us, and that is manifestly by impulse, the only way we can conceive bodies to operate in. If, then, external objects be not united to our mind, when they produce ideas in it, and yet we perceive these original qualities in such of them as singly fall under our senses; it is evident, that some motion must be thence continued by our nerves or animal spirits, by some parts of our bodies, to the brain or seat of sensation, there to produce in our minds the particular ideas we have of them." We see, therefore, that the doctrine here held by Mr. Locke, is, that bodies through the instrumentality of their several media act upon the senses, and occasion certain motions in the nerves and brain, that become the cause of ideas in the mind; but he does not say that they make any impression upon the mind, such as that which they make upon the organs of sense. We shall presently see, that so far is he from attempting to explain in what manner any motions in the brain can produce ideas in the mind, or from maintaining, that matter can act upon mind only by impulse, he expressly denies that the process of perception can be explained, by any powers or capacities with which we are endowed, and is resolvable solely into the will and power of God. It is true, that in one of his letters to the Bishop of Worcester, he afterwards expressed some distrust of the opinion he here advanced, viz. that bodies could act upon each other (not upon mind) only by impulse; but instead of ascribing the insertions of this passage in the future editions of his works, to negligence in the printer or forgetfulness in an author, who discovered on all occasions such an ardent pursuit of truth and so much readiness and alacrity to make alterations in his

treatise, upon any change in his opinions; I would rather attribute it to what was a more probable, and I suspect the true reason; a conviction, upon further reflection and examination, that there was no sufficient cause to induce him to alter his language, or give up his doctrine. Mr. Locke, in the letter referred to, appears, at that moment to have thought, that Sir Isaac Newton, in his *Principia*, had proved, upon the principles of his system of gravitation, in which the heavenly bodies are said to tend towards each other according to certain laws, that one portion of matter may act upon another without impulse, and even through a vacuum. But upon a more minute inquiry, he may have perceived that Newton maintained no such opinion, and expressly denies, that he supposes the heavenly bodies to operate upon each other through a vacuum. He himself, obviously supposes, that the attraction of bodies is occasioned by some thin and elastic fluid pervading the solar system, and propelling them towards each other by impulse; although he declares that he could not deduce the existence of such a principle from the phenomena exhibited to him, but only the laws of its action. This is a much more probable account of Mr. Locke's failure to comply with the promise, which he made to the Bishop of Worcester, in regard to a proposed alteration of his work, than that which has been given by Dr. Reid. He found no sufficient reason, upon examination, to alter his language, or relinquish his opinions.

It is not denied, that Mr. Locke often makes use of the term, impressions made upon the mind, but he uses it only in the popular and figurative sense, as implying some effect produced upon it by the agency of the body, which Dr. Reid himself allows to be a mode of expression authorised by ordinary usage. But, that he is liable to the charge laid against him in the following passage, we utterly deny. "But it is evident," says Dr. Reid "from the manner in which the phrase, (impressions) is used by modern Philosophers, they mean not barely to express by it, my perceiving an object, but to

explain the manner of perception. They think that the object perceived acts upon the mind in some way similar to that in which one body acts upon another, by making an impression upon it. The impression upon the mind is conceived to be something, wherein the mind is altogether passive, and has some effect produced in it by the object. But this is an hypothesis, which contradicts the common sense of mankind, and ought not to be admitted without proof. When I look upon the wall of my room, the wall does not act at all, nor is capable of acting; the perceiving it is an act or operation in me." This last sentence is indeed very extraordinary, as coming from one who had so well studied the subject of metaphysics; and discovers at times no inconsiderable acuteness and profoundness of observation. It would appear to be rather the crude suggestion of one who was totally unskilled in the science. When I look at the wall of my room; who was ever silly enough to assert, that the wall acts upon my mind, or even upon my organs of sense. The schoolmen, indeed, misinterpreting Aristotle, ascribed to him the opinion, that sensible species or films passed off from the object, and impinging upon the senses made their way into the mind, and enabled us to perceive. But even this doctrine, absurd and ridiculous as it is, did not suppose any action of the object contemplated, except through the intervention of their several media, and those aerial beings called sensible species. The account given of vision is very simple and intelligible, according to the system of Mr. Locke and Aristotle. When I look at the wall of my room; they do not say that the wall acts upon my mind or sense, but that the rays of light reflected from it, pass into the eye, an optical instrument, adapted to the purpose of collecting and refracting them, and forming an image upon the retina, cause such motions in the nervous coat connected with the brain, and in the brain itself, as to enable the mind to have a perception of it. In what way this action, in the bodily organs,

enables me to perceive, they acknowledge themselves in utter ignorance. Dr. Reid, however, insists "that from the manner in which the phrase, impressions on the mind, is used by modern philosophers, it is evident that they mean not merely to express by it, my perceiving an object, but to explain the manner of perceiving it." This objection is so often repeated against the philosophers, by the Dr., that they undertook the task of explaining the manner of perception; evidently claiming for himself the merit of having discovered, that in this particular they made an attempt above the highest efforts of human power; that it will be worth our while at this early stage of the discussion, to endeavour, if possible, to put this point at rest, and exculpate the philosophers from this accusation. No one appears to have formed more just conceptions of the narrow limits of human understanding than Mr. Locke, and more scrupulously to have confined himself within those limits in all his inquiries. In his short answer to Father Mallebranche, which is an invaluable document, of which we shall make liberal use in explaining his theory of ideas; he was naturally led to advert to this topic, in animadverting upon the fanciful doctrines of that very ingenious but enthusiastic author. Why Dr. Reid should undervalue this treatise, and speak of it as exhibiting proof, that Mr. Locke, at the time he wrote it, was declining into imbecility of mind, as well as the infirmities and decrepitude of age, we profess ourselves unable to determine. Certain it is, that the treatise is at once a sufficiently ample and satisfactory refutation of the opinions of the Father, and at the same time furnishes incontestible proof, as we shall show in the sequel, that Mr. Locke maintained no such opinions about ideas, as have since been attributed to him. Had his life been sufficiently protracted, I doubt not, that he would have proved with a force of argument equally conclusive, that neither the theory of Berkeley nor that of Hume, had the smallest connection with his.

But to the point we have undertaken to discuss. I assert, that Mr. Locke expressly disclaims making any attempt to explain the manner of perceiving objects ascribed to him by Dr. Reid. Hear him, in his reply to Mallebranche. "What I have here said, I think sufficient to make intelligible, how, by material rays of light, visible species may be brought into the eye. But when by this means an image is made on the retina, how we see it, I conceive no more than when I am told we see it in God. How we see it, is, I confess, what I understand not, in the one or in the other, only it appears to me more difficult to conceive a distinct visible image in the uniform invariable essence of God, than in variously modifiable matter; but the manner how I see it, still escapes my comprehension. Impressions made on the retina by rays of light, I think I understand; and motions from thence continued to the brain may be conceived, and that these produce ideas in our minds, I am persuaded, but in a manner to me incomprehensible. This I can resolve only into the good pleasure of God, whose ways are past finding out. And I think I know it, as well when I am told these are ideas that the motion of the animal spirits, by a law established by God, produces in me; as when I am told they are ideas I see in God. The ideas, it is certain, I have, and God both ways is the original cause of my having them; but the manner how I come by them, how it is that I perceive, I confess I understand not; though it be plain motion has to do in producing them; and motion so modified is appointed to be the cause of our having them, as appears by the curious and artificial structure of the eye, accommodated to all the rules of refraction and dioptricks, that so visible objects might be exactly and regularly painted on the bottom of the eye." Again he says. "One who thinks ideas are nothing but perceptions of the mind, annexed to certain motions of the body by the will of God, who hath ordered such perceptions always to accompany such motions, though he know

not how they are produced; does in effect conceive those ideas or perceptions to be only passions of the mind, when produced in it, whether we will or no, by external objects." Again. "That which is said about objects exciting ideas in us by motion, and our receiving the ideas we have once got in our memories; does not, I confess, fully explain the manner how it is done. In this I frankly avow my ignorance, and should be glad to find in him any thing that would clear it to me." Could Dr. Reid have ever read these passages with attention, or was he determined to make every thing bend to the establishment of a new theory. "It is now, I think" says professor Stewart "pretty generally acknowledged by physiologists, that the influence of the will over the body, is a mystery which has never yet been unfolded; but, singular as the fact may appear, Dr. Reid was the first person who had the courage to lay completely aside the common hypothetical language concerning perception, and to exhibit the difficulty in all its magnitude by a plain statement of the fact."* Let the Professor read the aforementioned passages of Mr. Locke, and blush for his ignorance or disingenuousness. What has Dr. Reid said about perception, which has not in substance been maintained by Mr. Locke, as far as we have yet stated their opinions? Dr. Reid says, that in order to perception there must be some change produced in the organ by the object; that the organ produces some change in the nerve; and the nerve produces some change in the brain. This is precisely the doctrine of Mr. Locke. But Dr. Reid was the first who had the courage to exhibit the difficulty of explaining the manner of perception in all its magnitude, and content himself with a simple statement of the fact. We have already shown that this same difficulty was felt and acknowledged by Mr. Locke. This is not the only instance in which Dr. Reid is merely stating

* See Chap. 1, sect. 3, *Philosophy of the Human Mind.*

and illustrating the principles of Mr. Locke, when he imagines himself combatting his errors; and in which the Professor gives him the credit of achieving, what had been long before accomplished by the English metaphysician. After these express and unequivocal declarations of Mr. Locke, never let us again hear it alleged, that when philosophers talk of impressions made upon the mind, which expressions they evidently use in a figurative sense, they mean, not barely to speak of the perception of an object, but to explain the manner of perceiving it.

We come now to the last and capital objection brought by Dr. Reid, against Mr. Locke and the philosophers; an objection which lies at the very foundation of his system, and which if it be refuted, overturns his whole superstructure; which is again and again repeated in his essays, until the reader is sated and fatigued with its recurrence. The objection is this. "There is another conclusion drawn from impressions made upon the brain in perception, which I conceive to have no solid foundation, though it has been adopted very generally by philosophers. It is, that by impressions made on the brain, images are formed of the object perceived; and that the mind being seated in the brain as its chamber of presence, immediately perceives those images only, and has no perception of the external object but by them. This notion of our perceiving external objects not immediately, but in certain images or species of them conveyed by the senses, seems to be the most ancient philosophical hypothesis we have on the subject of perception, and to have, with very small variations, retained its authority to this day." Again—"Plato's subterranean cave, and Mr. Locke's dark closet, may be applied with ease to all the systems of perception that have been invented. For they all suppose that we perceive not external objects immediately, and that the immediate objects of perception, are only certain shadows of the external objects. Those shadows or images, which we im-

mediately perceive, were, by the ancients, called species, forms, phantasms. Since the time of Des Cartes, they have commonly been called ideas, and by Mr. Hume impressions. But all philosophers, from Plato to Mr. Hume, agree in this, that we do not perceive external objects immediately, and that the immediate object of perception must be some image present to the mind." This is the grand heresy with which Dr. Reid charges the philosophers; and which is represented as having had such a disastrous influence, as to have hoodwinked the whole order from Plato to Mr. Hume; jaundiced their views of moral nature; deprived them of common sense, and laid the foundation upon which was built a system of errors, follies and absurdities, that have infected and vitiated the science of mind, and which, unless they had been happily detected, must forever have closed the door to its advancement.

No terms appear too strong for the Dr., when he is descanting upon the mischiefs which have been occasioned by what, to most persons, would appear to be a very innocent and inoffensive thing; the theory of perception, or the theory that ideas are images in the mind. He may, indeed, be considered as rising to the sublime, when he speaks with so much feeling and eloquence on this subject. At one time he exhibits the ideal theory, as a "penurious and malignant ray," sufficient only to "shed a darkness visible upon the human faculties;" or "an ignis fatuus, leading us into bogs and quagmires;" or as "making an attempt no less audacious than that of the giants to dethrone Jupiter, in waging an unequal war with common sense, from which it must come off with dishonour and loss." At another time, it is represented as "one of the main pillars of modern scepticism;" as the "parent of those many paradoxes so shocking to common sense, and of that scepticism, which disgrace our philosophy of the mind, and have brought upon it the ridicule and contempt of sensible men;" as the "forbidden tree of knowledge which, we no

sooner taste, than we perceive ourselves naked, and stript of all things, of our very selves; nay we see ourselves and the whole frame of nature shrink into fleeting ideas, and like Epicurus's atoms, dance about in emptiness." In fine, the theory of ideas, "like the Trojan horse, had a specious appearance both of innocence and beauty, but carried in its belly death and destruction to all science and common sense." Such is the representation given of the theory of all the philosophers who lived before the time of this author. Could Aristotle, Des Cartes, Mallebranche, and above all Locke, names that should ever be repeated with profound veneration, and to whose illustrious shades the votaries of science will ever pay the most enthusiastic homage, have heard such an account of their systems, with what resentment and indignation would they have listened to it? Had Dr. Reid, as we have before allowed, confined his invectives to the ridiculous theory of Berkeley and the sceptical fooleries of Hume, we had willingly and liberally indulged him in as severe a style of animadversion and vituperation, as he might have thought proper to adopt. But when, losing sight of the distinction between truth and error, between a just philosophy and an indigested mass of follies and absurdities, he would confound them all together; when he would represent the scepticism of Berkeley, and the intellectual fooleries of Hume, as legitimate inferences, from the principles of that sublime philosophy, whose foundation was laid by the Stagyrte, and whose structure was carried on and completed by Des Cartes, Mallebranche, and above all Mr. Locke, we crave leave to enter our protest against such unfair dealing, and our most decided reprehension of such egregious misstatements.

The same subject continued.

IN order that we may rightly comprehend the objection made by Dr. Reid against the philosophers, let us see to what an extravagant length he is capable of carrying it. Not contented with representing them as maintaining the doctrine, that an idea is an image in the mind, the representative of the object without, and which alone is perceived by the mind; but what would seem almost incredible, did we not know it to be true, he makes them assert that that image or species is a material and physical substance, that should be perceptible to the anatomist in his dissections of the brain. In answer to those with whom he is contending, or rather supposes himself contending, he says,—“ We have not the least evidence, that the image of any external object is formed in the brain. The brain has been dissected times innumerable by the nicest anatomists; every part of it examined with the naked eye and with the help of microscopes; but no vestige of an image of any external object was ever found.” The opinion, then, ascribed to metaphysicians, is, that in perception, a real, substantial, visible image passes through the organs into the brain, and from thence into the mind to make an impression upon it. Could any thing more ridiculous have been conceived? Must not all the philosophers have been out of their senses, to have believed in it? While in all other matters they discovered so much penetration and deep research, it is supposing them, on this alone, to have been bereft of their reason and understanding. Let us put this matter to the test of a moments reflection and examination. The philosophers believed, that all the ideas we obtain from sensation, such as those of extension, figure, motion, rest, colour, taste, sound, and the endless train which come to us from outward objects, are so many images that

are real existences or substances collected in the cells of the brain or deposited in the mind, waiting our summons to call them forth, and arrange them into proper order. It would not be easy to form a more correct resemblance of Epicurus's atoms dancing about in infinite space, than would be displayed by such a motly assemblage of ideas, of such various hues and physiognomies.

I shall state, in few words, what are the points which I shall undertake to establish on this subject. I do not go as far as Dr. Priestley, and positively assert this whole doctrine of ideas to be a chimæra of Dr. Reid's own creation, or the progeny of his own brain; as I am willing to admit that he had some aid in the procreation and delivery of it from that bright fraternity the schoolmen, whose heads appear to have been wonderfully prolific in the production of metaphysical monsters, and who displayed as man midwives, extraordinary adroitness in ushering them into light. I assert, then, this doctrine was not that of Aristotle, but of the schoolmen, who misunderstood him; nor of Des Cartes, and Locke; that we see some remains of it in Father Mallebranche, though he rejected the greater part of it, and in the language of many philosophers, as of Newton and Clarke, who fell into the phraseology of the schools, without probably having studied this subject. I maintain, finally, that it is not upon this ground, but upon a much deeper one, is built the scepticism of Berkeley and Hume. I intend to enter upon the explanation of the opinions of all the philosophers, but shall commence with that of Mr. Locke, as most English readers are familiar with his works, and all can more easily estimate the force of the arguments which are contained in their own language.

I say, then, that Mr. Locke maintains no such opinion as that ascribed to him by Dr. Reid; that our ideas of outward objects are images or representatives of them in the mind, which alone are perceived by the mind. I commence with

my presumptions against this objection, and then shall proceed to my demonstrative proofs of its falsehood. In the first place, there are strong presumptions, that whatever may be the occasional language of Mr. Locke, and he must have had a mind more than human, if his language had not received its tincture, in some degree, from the schools; he never did intend to inculcate the doctrine that our ideas are real images in the mind, and the only immediate objects of perception.

The first presumption.—If he maintained that ideas are images in the mind, why does he not, instead of commencing his treatise with informing us, that “every man is conscious to himself that he thinks, and that what his mind is applied about whilst thinking, are the ideas that are there,” rather enter upon his task with proving the existence of these images? With that discernment, which he undoubtedly possessed, could he think, that every person is conscious of the existence of such things within them as these images? Could mankind so readily perceive that they had within them images of whiteness, hardness, sweetness, motion, man, elephant, army, drunkenness, all of which he enumerates in the very entrance upon the account he gives of the original of our ideas? If he considered the term ideas as equivalent to thoughts, this was a very natural mode of procedure; but if he considered it as expressive of a certain something in the mind, of which the vulgar never heard, it would seem natural to have undertaken the proof of their existence, and made that proof a prominent part of his treatise.

Presumption second.—If Mr. Locke really inculcated the doctrine that ideas are images in the mind, and immediate objects of perception, could it be possible that he would not have discerned, that the phenomenon of perception is no better explained by the intervention of these images than without them? If the mind perceives the image only as the representative of the outward object, does not the act of per-

ception remain still as much unexplained as before? If it be said that this image is present to the mind, and, therefore, that the mind can act upon it, and perceive it on account of its immediate contiguity and connection, while it cannot act upon objects more remote, since it cannot act where it is not; still it is as difficult to be explained by the human understanding, and in fact insoluble to it, how the mind can perceive any thing, however nearly connected with it. A moments reflection must have convinced such men as Locke and Des Cartes, whatever might be the jargon of the schools, that it would be as incomprehensible to us, in what manner the mind can hold converse with the representatives of outward objects, as with those objects themselves.

Presumption third.—It is strange and unaccountable, if Mr. Locke held this doctrine, that in no part of his long works he has any where expressed himself in such unequivocal terms about it, that a question may still be made of his opinion. Instead of doing this, we find him, when the Bishop of Worcester, the admirable Stillingfleet, objected to his use of the word ideas, and his doctrine concerning them, telling him, in his reply, that he was entirely indifferent as to the word which was used, whether it were notion, or any other, provided it was considered as expressive of whatever was in the mind when a man thinks. Now what could Mr. Locke, who was an advocate of the soul's immateriality, suppose to be in the mind, but the thoughts?

Last Presumption.—I shall not multiply presumptive proofs, as I feel confident that my demonstrative ones will be satisfactory. Besides, that we do not find in the works of Mr. Locke, the doctrine of images occupying a principal place, as we should have reason to expect, if he believed it; why do we never find him answering objections, that would so naturally present themselves against it? Would he not have perceived that it went to the rejection of an external world, and should we not have found him combatting such

an objection? We find him, indeed, engaged in one part of his work in stating the evidence upon which we believe the existence of an external world, as this naturally fell in with his plan; but it is to be observed, that it is upon principles entirely discrepant from those which would have been assumed by a man, who believed that ideas are only the images of outward objects; and, of course, who had to show the reason, why, when we perceive only the aerial delegates, we should conclude that their constituents really exist. Dr. Reid, however, asserts, that Mr. Locke and others, did undertake to prove by argument, and rest upon that proof, the existence of an external world. "It was this theory of ideas that led Des Cartes, and those that followed him, to think it necessary to prove, by philosophical arguments, the existence of material objects. And who does not see that philosophy must make a very ridiculous figure in the eyes of sensible men, while it is employed in mustering up metaphysical arguments, to prove that there is a Sun and Moon, an Earth and a Sea. Yet we find these truly great men, Des Cartes, Mallebranche, Arnauld and Locke, seriously employing themselves in this argument. Surely their principles led them to think, that all men, from the beginning of the world, believed the existence of those things upon insufficient grounds; and to think that they would be able to place upon a more rational foundation this universal belief of mankind. But the misfortune is, that all the laboured arguments they have advanced, to prove the existence of those things we see and feel, are mere sophisms. Not one of them will bear examination." This same sentiment is often repeated in the works of this author, as if he evidently plumes himself on having discovered an error in those philosophers, and could lay claim to the merit of having first perceived the true ground, on which rests the existence of an exterior world. Passing by the other philosophers implicated in this charge, let us attend to Mr. Locke alone; and I think, we shall see

that the Dr. is capable of great disingenuousness and inaccuracy in stating the sentiments of others; and evinces no degree of backwardness in urging his own pretensions to merit, even when those pretensions are by no means unquestionable. "It is therefore," says Mr. Locke, "the actual receiving of ideas from without, that gives us notice of the existence of other things, and makes us know, that something doth exist at that time, without us, which causes that idea in us, though, perhaps, we neither know, nor consider how it does it. For it takes not from the certainty of our senses, and the ideas we receive by them, that we know not the manner wherein they are produced, viz. whilst I write this, I have, by the paper affecting my eyes, that idea produced in my mind, which, whatever object causes it, I call white; by which, I know that that quality or accident (i. e. whose appearance before my eyes always causes that idea) doth really exist, and hath a being without me. And of this, the greatest assurance I can possibly have, and to which my faculties can attain, is the testimony of my eyes, which are the proper and sole judges of this thing; whose testimony I have reason to rely on as so certain, that I can no more doubt whilst I write this, that I see white and black, and that something really exists, that causes that sensation in me, than that I write or move my hand; which is a certainty as great as human nature is capable of, concerning the existence of any thing, but of a man's self alone, and of God." Again. "For I think nobody can, in earnest be so sceptical, as to be uncertain of the existence of those things which he sees and feels. At least, he that can doubt so far, whatever he may have with his own thoughts, will never have any controversy with me; since he can never be sure I say any thing contrary to his opinion." After these assertions, to use the language of Warburton, he must calculate largely on the advantage of favourable hearers, who would presume to indulge in such a statement as the following. "It is remarkable, that Liebnitz's system,

that of Mallebranche, and the common system of ideas, or images of external objects in the mind, do all agree in overturning all the authority of our senses; and this one thing, as long as men retain their senses, will always make all these systems truly ridiculous." Now would it be possible for Mr. Locke, more precisely and emphatically to maintain the doctrine, that the existence of an exterior world rests upon the evidence of our senses; and that that evidence ought to be held satisfactory and conclusive? Of the existence of the paper before him, he says, he had the "greatest assurance he could possibly have, and to which his faculties could attain; the testimony of his eyes, which were the proper and sole judges of this thing, whose testimony he had reason to rely on as so certain, that he could no more doubt while he wrote that something really existed, that caused in him the sensations of white and black, than that he did write or move his hand, which was a certainty as great as human nature is capable of concerning the existence of any thing, but a man's self alone, and of God." Could we conceive of expressions more strong and definite? The existence of outward objects, rests upon the testimony of our senses, and they are the proper and sole judges in the thing; and, moreover, their testimony establishes the matter beyond doubt or controversy. It is true, that Mr. Locke proceeds afterwards to allege, for the satisfaction of those who could be so sceptical as to doubt the evidence of the senses, what he denominates other concurrent reasons, to strengthen the assurance afforded by these senses. He does not, as Dr. Reid represents him, rest the belief of an exterior world upon arguments furnished by reason; he does not consider these arguments as constituting any material portion of the proof of an external world, for that he regards as resting solely upon the testimony of sense; but he merely advances some considerations, which should induce us to place entire confidence in the report of these

senses, as witnesses in the case. These considerations, for instance, are such as these.

Our perceptions are produced by outward objects, affecting the senses; because those that want the organs of any sense, never can have the ideas belonging to that sense produced in their minds; secondly, because, we sometimes find that we cannot avoid having ideas produced in our minds; thirdly, because many ideas are produced in us with pain, which, afterwards, we remember without the least offence; and lastly, our senses confirm each others testimony, concerning the existence of sensible things." These are the concurrent reasons of Mr. Locke, that corroborate the report, which our senses make, of the existence of an external world. Is this to rest the proof of an exterior world, upon arguments deduced from reason? Was it ever before regarded as reflecting discredit upon witnesses to matters of fact, to advance additional considerations that corroborate the truth of their report?

From our presumptions, let us proceed to our demonstrative proofs. Mr. Locke, in the commencement of his *Treatise upon the Understanding* apologises for the frequent use of the word *idea*; and mentions that he considers it as equivalent to the terms, *phantasm*, *notion*, *species*, or whatever it is, which the mind is employed about in thinking. "Here," says Dr. Reid, "we have three synonyms to the word *idea*. The first and last are very proper to express the philosophical meaning of the word, being terms of art in the *Peripatetick* philosophy, and signifying images of external things in the mind, which, according to that philosophy, are objects of thought. But the word *notion*, is a word in common language, whose meaning agrees exactly with the popular meaning of the word *idea*, but not with the philosophical." This passage would lead one to think that Mr. Locke, taking up the science of pneumatology, where the *Peripateticks* left it, intended to maintain the same doctrine with them, and to use

the term *idea* under the same signification, in which they understood those of *species* and *phantasm*, by which they meant images of external things in the mind, which, according to that philosophy, are the only immediate objects of thought. Now, let us see what Mr. Locke thought of the *Peripatetick* doctrine, or, as it should rather be denominated, the *scholastic* doctrine (for I think I shall be able to show that it was not taught by Aristotle,) of sensible species. In the beginning of his answer to Father Mallebranche, he says, "though the *Peripatetick* doctrine of the species does not at all satisfy me; yet, I think it were not hard to show, that it is as easy to account for the difficulties he charges on it, as for those his own hypothesis is laden with. But it being not my business to defend what I do not understand, nor to prefer the learned gibberish of the schools, to what is yet unintelligible to me in Father Mallebranche, I shall only take notice of so much of his objections as concerns what I guess to be the truth.

"Though I do not think any material species, carrying the resemblance of things by a continual flux from the body we perceive, bring the perception of them to our senses; yet I think the perception we have of bodies at a distance from ours, may be accounted for, as far as we are capable of understanding it, by the motions of particles of matter coming from them, and striking on our organs." After exhibiting such a passage as this, what becomes of that fanciful and romantic genealogy of ideas given by Dr. Reid, in which they are said to have had their origin in the films passing from bodies of the Pythagorean school; to have renewed their existence in the eternal models or exemplars of Plato, and the sensible species of Aristotle and the schoolmen; to have attained their name, and grown to full maturity under the fostering care of Des Cartes, Mallebranche and Locke; to have sunk into the decrepitude and infirmities of age, and spoken the language of scepticism and atheism under the patronage

of Berkeley and Hume; and finally, to have received a decent death and interment, and had their funeral obsequies celebrated by the redoubtable champions of the Scottish school of metaphysics? It must be admitted, that the Dr. has traced for these ideas a long and venerable line of ancestors, and derived their lineage from an ancient and illustrious house; but posterity when their history shall be fully investigated, will be likely to assign this whole genealogy a place with that in the Tale of the Tub, in which the papal bulls, are said to have come in regular line of succession from those which once guarded the golden fleece. Does not Mr. Locke here tell us, as plainly as language enabled him to do, that he is not satisfied with the doctrine of sensible species maintained by the Peripateticks; and does not think that any material species, carrying the resemblance of things by a continual flux from the body enables us to perceive it? This he calls the learned gibberish of the schools; though he thinks no more unintelligible than the doctrine of all things being seen in God; or of the necessity of the intervention of ideas intimately united to the soul to enable us to perceive objects at a distance, maintained by Mallebranche. What, now, becomes of Dr. Reid's statement about Mr. Locke and the philosophers, in which there is said to be such a remarkable unanimity among them on the subject of ideas being the images or representatives of outward objects? Mr. Locke neither agrees with the Peripateticks, nor with Father Mallebranche. He tells us expressly, that he neither supposes any resemblances of outward objects to pass through the organs of sensation to the mind, with the schoolmen; nor does he admit the necessity of the intervention of ideas, or the images of things in order to the perception of remote objects. He distinctly states that all that his system supposes is, what is abundantly substantiated by facts, "that the perception we have of bodies at a distance from ours, may be accounted for, as far as we are capable of understanding it, by the motion

of particles of matter coming from them, and striking on our organs. In feeling and tasting, there is immediate contact. Sound is not unintelligibly explained by a vibrating motion communicated to the medium; and the effluvia of odorous bodies will, without any great difficulties, account for smells." But Dr. Reid himself admits, that the term notion, one of the synonyms of the word idea used by Mr. Locke, is a word in common language, whose meaning agrees exactly with the popular meaning of the word idea, but not with the philosophical." Why not, then, always consider Mr. Locke as annexing this meaning to the word, instead of distorting it from its evident and natural signification, in order to serve the purpose of a system? In the explication of a term, in which he was at a loss for expressions of the same or similar import, is he to be considered as espousing the doctrines of the Peripateticks, because he admits into his discourse two of their terms of art? Sufficient pains have been taken by Mr. Locke, to correct any misapprehensions of this nature, that might arise about his meaning. Numberless instances might be brought forward in which the words idea, notion, thought, object of thought, are used by him interchangeably as of the same meaning, while the terms species, phantasm, in their technical import, never recur, after the first mention of them, throughout the *Treatise on Human Understanding*. In his introduction, we find him asserting that he shall, "first inquire into the original of those ideas, notions or whatever else you please to call them, which a man observes, and is conscious to himself he has in his mind. The Bishop of Worcester, who was certainly able to understand the meaning of words as well as most men, holding a similar rank in divinity, to that which Mr. Locke held in metaphysical science, in the objections he published against the treatise of the latter writer, remarks, "the world hath been strangely amused with ideas of late, and we have been told that strange things might be done by the help of ideas; and yet these

ideas, at last, come to be only common notions of things, which we must make use of in our reasoning." Mr. Locke, in his reply repeatedly tells him, that he is entirely indifferent as to the term that is used, provided it only well expresses the thing which is the immediate object of the mind in thinking. Great use has been made of this last mode of expression, that an idea is the immediate object of the mind in thinking; as if this clearly showed, that Mr. Locke believed an idea to be an image or representative of the outward object, which alone was immediately perceived by the mind. It is evident, however, that this is a great mistake. An inaccurate expression, if it be considered altogether inaccurate, could weigh nothing against the whole tenor of a writer's phraseology and doctrine. Mr. Locke, when he says, "that an idea is the immediate object of the mind in thinking," means nothing more than that it is so in the same sense in which a thought or perception is the immediate object of the mind in thinking. This is proved beyond all controversy by the numerous places in his work, in which the words *idea* and *thought* are used without distinction, as significant of the same thing. Take a few examples that will settle the point. "To ask at what time a man has first any ideas, is to ask when he begins to perceive, having ideas and perception, being the same thing. I know it is an opinion that the soul always thinks, and that it has the actual perception of ideas in itself, constantly, as long as it exists; and that actual thinking is as inseparable from the soul, as actual extension is from the body; which, if true, to inquire after the beginning of a man's ideas, is the same as to inquire after the beginning of his soul." Again—"Who can find it reasonable, that the soul should in its retirement, during sleep, have so many hours thoughts, and yet never light on any of those ideas, it borrowed not from sensation or reflection; or at least preserve the memory of none but such, which being occasioned from the body must needs be less natural to a spirit?

'Tis strange the soul should never once in a man's whole life, recal over any of its pure native thoughts, and those ideas it had before it borrowed any thing from the body." Again—" Besides articulate sounds, therefore, it was further necessary, that he should be able to use these sounds, as signs of internal conceptions; and to make them stand as marks for the ideas within his own mind, whereby they might be made known to others, and the thoughts of men's minds be conveyed from one to another." I might multiply examples to any extent, but it would be useless, as it cannot be doubted that the words, idea, thought, notion, are used without distinction by Mr. Locke. I shall give but a single instance more. " Man, though he have great variety of thoughts, and such from which others, as well as himself, might receive profit and delight; yet they are all within his own breast, invisible, and hidden from others, nor can of themselves be made appear. The comfort and advantage of society, not being to be had without communication of thoughts, it was necessary that man should find out some external sensible signs, whereby those invisible ideas, which his thoughts are made up of, might be made known to others."

Secondly, Mr. Locke cannot intend to inculcate the doctrine, that ideas are the images of objects, because there are many passages in his work which are inconsistent with this doctrine, and some that directly contradict it. See the account which he gives of the ideas of the fœtus in the womb. " Therefore, I doubt not but children, by the exercise of their senses, about objects that effect them in the womb, receive some few ideas before they are born, as the unavoidable effects either of the bodies that environ them, or else of those wants or diseases they suffer; amongst which, (if one may conjecture concerning things, not very capable of examination,) I think the ideas of hunger and warmth are two; which probably are some of the first that children have, and which they scarce ever part with again. But though it be

reasonable to imagine, that children receive some ideas before they come into the world, yet these simple ideas are far from being those innate principles which some contend for, and we have above rejected. These here mentioned, being the effects of sensation, are only from some affections of the body, which happen to them there, and so depend on something exterior to the mind, no otherwise differing in their manner of production from other ideas derived from sense, but only in the precedency of time." Now, how are the images of external objects to get access to the mind of the fœtus in the womb; and yet Mr. Locke here admits that they have some ideas? These ideas, moreover, are said to arise from some affections of the body, which happen to them there, and to differ no otherwise in their manner of production from other ideas derived from sense, but only in precedency of time. Could Mr. Locke more directly and unequivocally inform us, that he considers all our ideas of outward objects as occasioned solely by certain modes of action upon the organs of sense, and these again occasioning the perceptions of the mind?

Again. Observe the account which Mr. Locke gives of memory. "The other way of retention, is the power to revive again in our minds those ideas, which after imprinting, have disappeared, or have been as it were laid out of sight; and thus we do, when we conceive heat, or light, yellow, or sweet, the object being removed; this is memory, which is, as it were the storehouse of our ideas. For the narrow mind of man, not being capable of having many ideas under view and consideration at once, it was necessary to have a repository, to lay up those ideas which, at another time, it might have use of. But our ideas being nothing but actual perceptions in the mind, which cease to be any thing when there is no perception of them, this laying up of our ideas, in the repository of the memory, signifies no more but this, that the mind has a power in many cases to revive percep-

tions which it has once had, with this additional perception annexed to them, that it has had them before; and in this sense it is that our ideas are said to be in our memories, when, indeed, they are actually no where; but only there is an ability in the mind, when it will, to revive them again, and as it were paint them anew on itself, though some with more, and some with less difficulty." This passage alone is decisive of the opinion of its author. Amidst much figurative language and illustration, susceptible of as much misconstruction as other parts of his works, of a similar nature, have received, we see him explaining the views which he entertains of ideas with great precision and accuracy. He speaks indeed of ideas that have been imprinted on the mind, and afterwards laid out of sight; of memory being the storehouse of our ideas or a repository in which they are laid up, that at another time they may be used; this all is evidently language beautifully metaphorical; and in expressions of this kind Dr. Reid's representation of Mr. Locke's doctrine terminates. A storehouse or repository in the brain or mind, would indeed, be an admirable place in which to lay up his sensible images or representatives of outward objects, and seems to give some countenance to his system. But proceed a step farther, and observe the explanation which is given of this metaphorical language, and his system soon vanishes into air. "Our ideas being nothing but actual perceptions in the mind, which cease to be any thing when there is no perception of them, this laying up of our ideas in the repository of the memory, signifies no more but this, that the mind has a power, in many cases, to revive perceptions which it once had, with this additional perception annexed to them, that it has had them before; and in this sense it is, that our ideas are said to be in our memories, when indeed, they are actually no where; but only there is an ability in the mind to revive them again." What now becomes of Dr. Reid's statement, that Mr. Locke and the philosophers

supposed images in the brain or mind, and of the brain having been dissected times innumerable by the nicest anatomists; every part of it examined by the naked eye and the help of microscopes, but no vestige of an image of any external object was ever found there? When the opinions he chooses to palm upon Mr. Locke and the philosophers, are placed by the side of their real sentiments, as conveyed in the clearest terms, what a contrast is exhibited? Of a nature similar to this is the advantage which Dr. Reid takes of the figurative language of Mr. Locke, in another place. "Two thousand years after Plato, Mr. Locke, who studied the operations of the human mind so much, and with so great success, represents our manner of perceiving external objects, by a similitude very much resembling that of the cave. "Methinks," says he, "the understanding is not much unlike a closet wholly shut out from light, with only some little opening left to let in external visible resemblances or ideas of things without. Would the pictures coming into such dark room but stay there, and lie so orderly as to be found upon occasion, it would very much resemble the understanding of a man, in reference to all objects of sight and the ideas of them. Plato's subterranean cave, and Mr. Locke's dark closet, may be applied with ease to all the systems of perception that have been invented; for they all suppose that we perceive not external objects immediately, and that the immediate objects of perception are only certain shadows of external objects?" This romantick story presents to the fancy such an interesting assemblage of objects, and so enchants the mind with the recital of subterranean caves, dark closets, wholly shut out from light, except some little opening left, through which the visible resemblances or shadows of things gain admittance; that it is really much to be regretted we are obliged to approach this enchanting scene with the wand of truth and the torch of nature: break up the spell; throw light into the dark closet and subterranean cave; and dis-

perse the dance of those aerial beings, the shadows and resemblances of things. We shall afterwards show, that no such shadows, as those described by Dr. Reid, ever entered into the cave of Plato; it is our purpose at present to clear the dark closet of Mr. Locke from those idle and busy intruders which, at the invitation of Dr. Reid, and without the consent or acquiescence of its owner, have gained access to it. But to be serious. To demonstrate that Mr. Locke in this passage never intended to say, except by metaphor, that our ideas are the shadows or resemblances of outward objects, we have only to consider the latter part of this last quotation from him, in connection with what he before said of memory, and then compare the whole of it with the passage immediately preceding. In the latter part, he says "would the pictures coming into such a dark room, but stay there, and lie so orderly as to be found upon occasion." Now, what does he mean, or can he mean, by the pictures coming into such a dark room, and staying there, but ideas entering the mind and being deposited in the memory; or by their lying so orderly as to be found upon occasion, but that by the power of memory the mind can again recal them? But if we recur to the doctrine he teaches about memory, we find him maintaining, that this laying up our ideas in the repository of the memory, signifies no more, but that the mind has a power of reviving perceptions which it once had; and in this sense it is that our ideas are said to be in our memories, when, indeed, they are actually no where. Is not the conclusion, unavoidable; that when Mr. Locke, by a beautiful figure represents our ideas as pictures coming into a dark room, staying there and lying so orderly as to be found upon occasion, he means nothing more than to say, simply, that through the channel of sensation our ideas of outward objects are obtained by the mind; and by the power of memory are retained, and can be recalled at pleasure? Of course, the whole of this representation is a mere figurative mode of

saying, what he had frequently before repeated in a more literal and intelligible style.

This argument, if it wants confirmation, receives it from what immediately precedes the passage in question. "External and internal sensation, are the only passages," says he, "that I can find, of knowledge to the understanding. These alone, as far as I can discover, are the windows by which light is let into this dark room." Methinks the Dr. did not examine his dark room with sufficient care, or he would have discovered in it two windows instead of one, by which those ethereal sprites, his ideas or shadows of objects, might make their way into it. Mr. Locke, as he had before designated sensation and reflection, as the two great inlets of human knowledge, here represents them under the metaphor of two windows, by which ideas are let into the originally dark room, or closet of the human mind. The similitude is apt and beautiful, and worthy of its great author; but it is somewhat unfortunate for the Dr.'s hypothesis, (for I shall beg leave to call the ideal theory, the hypothesis not of the philosophers, but of Dr. Reid,) that two windows are discovered in this dark room. We can easily conceive that Mr. Locke might have supposed, that the real visible shadows and images of outward objects, such as extension, figure, solidity, the sun, moon and stars, entered into a dark closet; but how shall we bring ourselves to believe, that he imagined the images of doubting, believing, hoping, fearing, and all the operations of the mind entered into it also. Yet we find he applies the term ideas, to that train of thoughts which we get from reflection, as well as to that which we obtain through sensation. Could he have believed them all alike to be the images and resemblances of their objects? I shall insist upon this point again, as it furnishes too conclusive an argument, to be slightly passed over. I cannot, however, conclude this article, without animadverting upon the observation, made by Dr. Reid, in the conclusion of the extract

we have just made from him. "Plato's subterranean cave, and Mr. Locke's dark closet, may be applied with ease, to all the systems of perception that have been invented. For they all suppose, that we perceive not external objects immediately, and that the immediate objects of perception, are only certain shadows of external objects." Here we see that to assert, that we perceive not external objects immediately, is considered as tantamount to saying, that the immediate objects of perception, are shadows of the external objects; whereas, upon the most superficial view of the subject, a wide distinction will be perceived between the two propositions. When philosophers say, that we perceive not external objects immediately, they mean that we can converse with them only through the instrumentality, or intermediation of the external organs of sense. Is not this true, and easily understood? They never did maintain, that there was any necessity for an intermediate thing, an image or representative, to enable them to perceive the objects around them. We do not immediately discern the satellites of Jupiter, or the ring of Saturn; but I can clearly see them through the intervention of a telescope. The organs of sense are considered by philosophers, as performing the office of this telescope, in bringing us acquainted with the world around us.

In the next place, Mr. Locke could not have inculcated the doctrine, that ideas are images in the mind; because as to the greatest part of our ideas, even of external objects, he positively and directly denies it. "To discover the nature of our ideas the better, and to discourse of them intelligibly, it will be convenient to distinguish them, as they are ideas, or perceptions in our minds, and as they are modifications of matter in the bodies, that cause such perceptions in us; that so we may not think, (as perhaps usually is done) that they are exactly the images and resemblances of something inherent in the subject; most of those of sensation being in

the mind, no more the likeness of something existing without us, than the names that stand for them are the likeness of our ideas, which yet upon hearing, they are apt to excite in us."

Again. "Let us suppose at present, that the different motions and figures, bulk and number of such particles, affecting the several organs of our senses, produce in us those different sensations, which we have from the colours and smells of bodies, viz. that a violet, by the impulse of insensible particles of matter, of peculiar figures and bulks, and in different degrees and modifications of their motions, causes the idea of a blue colour, and sweet scent of that flower, to be produced in our minds. It being no more impossible to conceive, that God should annex such idea to such motions, with which they have no similitude, than that he should annex the idea of pain, to the motion of a piece of steel dividing our flesh, with which that idea hath no resemblance."

Again. "From whence I think it easy to draw this observation, that the ideas of primary qualities of bodies, are resemblances of them, and their patterns do really exist in the bodies themselves; but the ideas produced in us by these secondary qualities, have no resemblance of them at all." The primary qualities of body are solidity, extension, figure, motion, rest or number; the secondary, colours, sounds, tastes, smells, heat, cold, &c. We see here, that Mr. Locke denies, of the larger portion of our ideas of external objects, that they can be the resemblances of those objects. How could Dr. Reid, if he possessed the candour and ingenuousness of a true inquirer into nature, in spite of such explicit avowals of Mr. Locke, persist in declaring, that all the philosophers were unanimous in the opinion, that our ideas of outward objects were the images or resemblances of them? Mr. Locke in this place, was evidently combatting the doctrine of the schools, which supposed sensible species, in case of the secondary, as well as primary qualities of body, to

pass from the object through the senses, and our ideas, in both cases, resemblances or images of them. Here we discern in Mr. Locke, the effort of a penetrating mind, prone to investigation, and having the deepest insight into nature, to relieve itself from the shackles of the school philosophy, but unable completely to accomplish it. He rejects the doctrine, that our ideas are resemblances of the qualities of bodies, except in the case of the primary qualities. He was betrayed into this slight error, perhaps, from considering, how much clearer our ideas are of figure, extension, motion, and rest, than those of taste, sound, &c. and on that account imagined a remote similitude, between the thought in the mind, and the quality of the body. And after all in this doctrine, do we find any thing more objectionable, than those analogies between mind and matter, so frequently traced in writing and discourse, in all languages; and from which analogies, in fact, are derived most of those terms, we make use of in designating the properties and operations of the mind? Admitting, however, that there cannot possibly be the most distant analogy or similitude, between a thought or idea of the mind, and any quality in an outward object, and of consequence, that Mr. Locke's theory is in this minute particular, liable to objection (which by the by, no one has ever shown or ever can show); yet, even in stating this part of his system, he has furnished us with an unanswerable argument, against those who have ascribed to him the ideal theory. He positively denies, that there is any resemblance between our ideas, and the secondary qualities of body; he admits a resemblance only in case of the primary; and in neither case does he maintain the doctrine, that ideas are images or shadows in the mind. To show that Dr. Reid is, to say the least, in the habit of assuming as much credit to himself, as he merits, for what would appear from his statements to be his discoveries, take the following example—Speaking on this subject, he says: “It is farther to be ob-

served, that with regard to some objects of sense, we may understand, what is meant by an image of them imprinted on the brain; but with regard to most objects of sense, the phrase is absolutely unintelligible, and conveys no meaning at all. As to objects of sight, I understand what is meant by an image of their figure in the brain; but how shall we conceive an image of their colour, where there is absolute darkness? And as to all other objects of sense, except figure and colour, I am unable to conceive what is meant by an image of them. Let any man say, what he means by an image of heat and cold, an image of hardness or softness, an image of sound, or smell, or taste. The word image, when applied to these objects of sense, has absolutely no meaning. Upon how weak a foundation, then, does this hypothesis stand, when it supposes that images of all the objects of sense are imprinted on the brain, being conveyed thither by the conduits of the organs and nerves." The hypothesis here mentioned, is attributed to Mr. Locke, as well as others, let us hear what he has to say upon the same subject. "From whence I think it is easy to draw this observation, that the ideas of primary qualities of bodies are resemblances of them, and their patterns do really exist in the bodies themselves; but the ideas produced in us by these secondary qualities, have no resemblance of them at all. There is nothing like our ideas existing in the bodies themselves. They are in the bodies, we denominate from them, only a power to produce those sensations in us; and what is sweet, blue or warm in idea, is but the certain bulk, figure, and motion, of the insensible parts in the bodies themselves which we call so." When these two passages are brought together, no comment can be necessary. We shall have occasion afterwards to remark, how often, as well as in this instance, when Dr. Reid supposes himself controverting the opinions, and detecting the errors of the English metaphysician, he is

only fighting with phantoms of his own creation, and really maintaining the doctrines of that great man.

The next and last argument, which proves that Mr. Locke did not maintain the ideal theory, is, that in tracing the origin of human knowledge, he calls by the common name of ideas, those which are conveyed into the mind by sensation, and those conveyed in by reflection. Now, it is barely conceivable, that he could have been either so entirely divested of understanding, or so wedded to the systems of the schools, as to have believed that the images of external objects are transmitted to the mind, to become immediate objects of perception; but how could he suppose that there are in the mind images of thinking, hoping, doubting, believing, conceiving? That he supposed there were images of these, has never been asserted. Why, then, if he believed there were images in the one case and not in the other, not draw the line of discrimination between them, by changing his term or giving warning of the difference of meaning? Mallebranche tells us when he thinks the intervention of ideas, as representatives of objects, necessary to perception, and why should not Mr. Locke have done the same? We find him in his answer to that Father, discovering a thorough insight into all the difficulties and embarrassments, which clogged his doctrine of ideas. "According to his hypothesis," says Mr. Locke, "of seeing all things in God, how can he know that there is any such real being in the world as the sun? Did he ever see the sun? No, but on occasion of the presence of the sun to his eyes, he has seen the idea of the sun in God, which God has exhibited to him; but the sun, because it cannot be united to his soul, he cannot see. How, then, does he know that there is a sun, which he never saw? And since God does all things by the most compendious ways, what need is there that God should make a sun, that we might see its idea in him, when he pleased to exhibit it, when this might as well be done without any real sun at all." And yet after

all this conclusive reasoning and profound reflection by Mr. Locke, we still hear it repeated, that he embraced an ideal theory, that paved the way to the exclusion of an exterior world by Berkeley, and of an immaterial one afterwards by Mr. Hume. Would not a writer, who could speak in this way, have seen, that if ideas of outward objects were images in the mind, and the only immediate objects of perception, this would lead to the exclusion of an external world, as well as the doctrine of Mallebranche? Here it is, however, in the doctrine of Mallebranche and the schoolmen, that we descry the trunk from which germinated the scepticism of Berkeley, and the atheism of Hume; while Mr. Locke, Aristotle, and Des Cartes, are entirely free from such errors and absurdities. Had Mr. Locke lived a few years longer, I doubt not he would have given as satisfactory an answer to Berkeley, as he had previously done to Mallebranche and Norris; and have shown to the entire satisfaction of the learned world, that their theories had no connection with his. To consummate our argument on this point, if any consummation be considered necessary, hear Mr. Locke speak in his answer to Mallebranche. "One who thinks ideas are nothing but perceptions of the mind, annexed to certain motions of the body by the will of God, who hath ordered such perceptions always to accompany such motions, does, in effect, conceive those ideas or perceptions to be only passions of the mind, (not images of things, but passions or affections of the mind) when produced in it by external objects." In a piece entitled *some thoughts concerning reading and study*, he says, "perspicuity consists in the using of proper terms for the ideas or thoughts, which he would have pass from his own mind into that of another man." In his answer to Norris, we find the following passage. "I am complained of, for not having given an account of, or defined the nature of our ideas." We see, therefore, that this was a subject of complaint against him. He proceeds—"By the nature of ideas

is meant here, their causes and manner of production in the mind; that is, in what alteration of the mind this perception consists. As to that, I answer, no man can tell; for which I not only appeal to experience, which were enough; but shall add this reason, viz. because no man can give any account of any alteration made in any simple substance whatsoever; all the alteration we can conceive being only of the alteration of compound substances, and that only by a transposition of parts. Their ideas, say these men, are the divine ideas, or the omniform essence of God, which the mind sometimes sees and sometimes not. Now, I ask these men, what alteration is made in the mind in seeing; for there lies the difficulty which occasions the inquiry. For what difference a man finds in himself, when he sees a marygold or sees not a marygold, has no difficulty, and needs not be inquired after; he has now the idea which he had not before. The difficulty is, what alteration is made in his mind; what changes that has in itself, when it sees what it did not see before, either the divine idea in the understanding of God, or as the ignorant think the marygold in the garden." After this last expression, how can any one represent Mr. Locke as maintaining that we see not objects immediately, but only the images or representatives of them in the brain or mind? He continues—"Either supposition as to this matter is all one; for they are both things extrinsical to the mind, 'till it has that perception; and when it has it, I desire them to explain, what the alteration in the mind is, besides saying as we vulgar do, it is having a perception, which it had not the moment before; which is only the difference between perceiving and not perceiving, a difference in matter of fact, agreed on all hands; which wherein it consists, is, for aught I see, unknown to one side as well as the other; only the one hath the ingenuousness to confess their ignorance, and the other pretend to be knowing." Could any man have reasoned in this way, who undertook, as has been alleged, to explain the

manner of perception, or considered ideas as the images of things in the mind? It will be seen to be impossible. Under this view of the subject too, which is no small advantage and recommendation of it, Mr. Locke's use of the word idea is relieved from all that ambiguity, of which he has been accused by Dr. Reid, when he makes it expressive of our perceptions of the operations of our minds, as well as those which we have relative to an external world. The ambiguity lies not in the use of the term by the author himself, but only in the conceptions of those who have chosen to misinterpret his writings. Mr. Locke complained greatly during his life, that his opinions were so frequently misunderstood and misrepresented, which circumstance arose probably from the nature of the subjects which he discussed, and the close application of mind necessary thoroughly to comprehend them; and we are sure they have not been less misunderstood, and less egregiously misrepresented since his death. "The first book of his essay," says Dr. Beattie, speaking of Mr. Locke, "which with submission, I think the worst, tends to establish this dangerous doctrine, that the human mind, previous to education and habit, is as susceptible of any one impression as of any other; a doctrine which, if it be true, would go near to prove, that truth and virtue are no better than human contrivances; or at least, that they have nothing permanent in their nature, but may be as changeable as the inclinations and capacities of men, and that as we understand the term, there is no such thing as common sense in the world." Could we suppose it possible that a writer who could speak in this way, had ever read the *Treatise on Human Understanding*? If he had read it, nothing can be more sure than that he had not studied it sufficiently to understand its principles. Because Mr. Locke supposes the human soul to be originally without ideas, and compares it merely, for the sake of illustration, to a *tabula rasa*, or sheet of white paper, with which similitude the Dr. is greatly offended, as

if the progress of science and the confirmation of truth, depend in any degree upon the use of a figure; I say does Mr. Locke, because he supposes the human soul to be without ideas, and to obtain them solely by experience, interfere with the original principles of the mind, its instincts, its propensities, passions, intellectual and moral powers, or abridge any one of them in the sphere of its action? Does he not expressly recognise the action of all of them during our progress in knowledge, and assign to each its appropriate function? Does not his whole system tend to strengthen, instead of weakening, the foundation of every truth, which is interesting to the human mind or important to the interests of society?* We entirely approve of the zeal, which Dr. Beattie

* Really, if we had not seen with our eyes these observations of Dr. Beattie, connected with the venerable name of Locke, but had allowed our imagination to go out in search of an author, to whom they would justly apply, we could have fixed upon none so well entitled to them in their utmost severity, as Mr. Helvetius, who without possessing one single property of the philosopher, has gained some of the honours which are due to that respectable appellation, by the freedom and impudence of his writings. Of his work upon man, which is as worthless in its matter, as profligate in its principles, it might justly be asserted, indeed, that "it tends to establish this dangerous doctrine, that the human mind, previous to education and habit, is as susceptible of any one impression as of any other; a doctrine which, if it be true, would go near to prove, that truth and virtue, are no better than human contrivances; or, at least, that they have nothing permanent in their nature, but may be changeable as the inclinations and capacities of men; and that as we understand the term, there is no such thing as common sense in the world." If this reprehension of Mr. Locke's book were just, his treatise should be classed with those of Helvetius, and all of them together consigned to that fate which those of the French author so richly deserve, and be committed to the flames. Helvetius, too, it seems, although not very adroit in comprehending the principles of Mr. Locke, discovers great willingness to enlist him in his party. In his *Treatise upon Man*, in one place, he says, "when we learn from Mr. Locke, that it is to the organs of sense we owe our ideas, and, consequently, our understanding;" (a non sequitur;) in another place, "Quintilian, Locke and I, say, the inequality in minds or understandings, is the effect of a

discovered in the cause of truth and righteousness, and the manly indignation, with which he seems to have been inspired against that sceptical philosophy, which struck at the root of all truth and certainty, and moreover, with that freedom, boldness and eloquence with which he inveighed against it; but at the same time, we cannot but be of opinion, that had he studied and better understood the writings of Locke and Clarke, he would have found himself supplied with much more tried and invincible arms, with which to have encountered and subdued the sceptics of his own day, than those with which he appears to have supplied himself. Had Mr. Hume been encountered by such powerful antagonists, as Locke, Clarke, or Butler, the issue of the contest would have been very different from that which took place, as in this case not only would his doctrines have been exposed, as they deserved, to scorn and opprobrium, from a consideration of their nature and consequences, but he would have found himself vanquished by solid argument.

known cause, and this cause is the difference of education." This singular and awkward appeal to Mr. Locke's doctrine by Helvetius, in order to give countenance to his own follies, strongly reminds us of what Cumberland, in his account of his own life, informs us of Mrs. Jennings, the wife of the celebrated Soame Jennings—"It was rather to be lamented," says Mr. Cumberland, "that this good lady had so great a respect for her husband's good sayings, and so imperfect a recollection of them, for though she always prefaced her recitals of them, with, as Mr. Jennings says, it was not always what Mr. Jennings said, and never as Mr. Jennings said." All that Mr. Locke, methinks, need say to Helvetius, if he could be supposed to hear such doctrines confirmed by his authority, would be to sum up all his contempt and indignation, in the laconic but pungent sarcasm, "how we apples swim."

CHAPTER IV.

The Opinions of Philosophers about Perception.

As soon as we attempt to penetrate into the opinions of the ancient philosophers in matters of science, as I think must have been experienced by every one who has undertaken the task, we find ourselves involved, like Eneas when he descended into the shades below, in darkness and obscurity; where every object is dimly seen through the mist; where we can with great difficulty grope our way; and where every shadowy form that floats before our eyes eludes our grasp, and when we essay to seize it, vanishes into air. This difficulty in ascertaining the sentiments of the ancients in matters of philosophy was, perhaps, from the nature of the case, to have been anticipated. Mankind in the constituent principles of their nature, and those moral and political relations in which they stand towards each other, are, for the most part, in all ages of the world nearly the same. Hence those lessons of practical wisdom, and those combinations of ideas, which arise out of their moral and political condition, and are circulated among any people in their intercourse with one another, are easily conveyed from age to age, and are as intelligible to the most remote posterity, as to those among whom they originated. But the case is quite different in matters of science and philosophy. The systems which are broached in these, seldom framed in the outset, out of the solid materials furnished by nature, but from the crude and perishing productions of human genius, having no archetype in nature, meet with the fate that attends all the monuments of human art and contrivance; have the period of their rise, prevalence and decay; until at length they perish, like the baseless fabricks of a vision, and

scarcely leave a wreck behind. When a system of philosophy unfounded in truth, and unsustained upon the firm basis of experience and observation, has thus passed away, the meaning of its terms of art is lost; and all those combinations of ideas, which were perfectly familiar to its votaries, during the period of its prevalence, are buried in oblivion.

To no part of science, perhaps, are these observations more applicable, than to that of the human mind, from the natural thinness and subtilty of the subject, and from the extreme difficulty which men always find in turning their attention inward, and reflecting upon the operations of the rational principle within them. For, as Mr. Locke finely remarks, the understanding, like the eye, whilst it makes us see all other things, takes no notice of itself; and it requires art and pains, to set it at a distance, and make it its own object. Notwithstanding, however, the darkness and obscurity which hang over the subject, we shall endeavour, as far as the labours of the learned enable us to proceed with tolerable certainty, to state the opinions of the ancients in reference to perception. Epicurus, who derived his doctrines from Democritus, although as Cicero remarks he always injured them by mixtures of his own, appears to have been of opinion, that we become sensible of the qualities of outward objects by means of certain species or images, which are perpetually passing, like thin films from bodies, in form similar to the surfaces of the bodies themselves, and striking upon our organs. Thus the species or images of visible bodies consist in certain small particles of a peculiar magnitude, figure, and motion, which having passed in a certain situation from a body, penetrate the organ of sight, and effect it in a peculiar manner. Thus also, hearing is the effect of an efflux of certain particles from the body, which is the cause of the sound, so formed and arranged as when they strike upon the ear to become audible. The sensations

produced by means of the other senses admit of a similar explanation. These images passing from the object to the organ give us perceptions, and from thence proceeding to the place where the mind is, so act upon it, by means of the body, or occasion such motions or impressions upon that part of the corporeal system in which the soul is seated, as to occasion thought.* This is probably the original of the sensible species of the schoolmen, about which so much has been said; but it will be carefully remarked, that although we find here an hypothesis unsubstantiated by facts, yet even in this origin of the system, it is not maintained, as asserted by Dr. Reid, that these sensible species or images are the immediate objects of perception to the mind, but that they only occasion such motions or impressions in the bodily organs connected with the mind, as to cause perceptions or thoughts in it. The hypothesis, it is not to be denied, is untenable and fraught with absurdity, but nevertheless, let it be rightly understood; it supposed an image or species, like thin films, to pass from the object to the organ, and from thence to the sensorium or seat of the intellect; but it did not suppose that this image was the immediate object perceived by the mind, but only that by the action which it occasioned in the system of the nerves and brain, it produced both perception and thought; the first in the sentient, and the second, in the intellectual principle, into which they divided the soul.

From the doctrine thus expounded by Democritus, and his followers, let us proceed to that of Plato. A writer upon whom so many excellent judges bestowed such high encomiums, and whom Cicero does not hesitate to denominate, the *Deus philosophorum*, must, for the times in which he lived, have had extraordinary claims to merit. But this merit, resplendent as it must have been, is greatly obscured

* See Brucker's *History of Philosophy*.

to our sight. Nothing can be more certain, than that his writings, ever since the period of their publication, have been more admired than understood. This writer's meaning, says the very learned Brucker, who has a right to pronounce an opinion, as with the aid of an excellent judgment and quick apprehension, he spent the greater portion of a long life, in searching out the theories of the ancient philosophers.—This writer's meaning, says he, is frequently lost in the obscurity of subtil distinctions; and sometimes after the Egyptian manner, concealed under the cloak of fables. The implicit followers of this philosopher, have been willing to exculpate their master from the charge of obscurity, by accusing his readers of dullness in their conceptions. But those who have attended to the origin of the Platonick philosophy will acknowledge, that it partakes largely of the character of subtilty and enthusiasm, which distinguished the Pythagorean system. In such a wondrous maze of words, does Plato involve his notions, that none of his disciples, not even the sagacious Stagyrte, could unfold them; and yet we receive them as sacred mysteries, and if we do not perfectly comprehend them, imagine that our intellects are too feeble to penetrate the conceptions of this divine philosopher; and that our eyes are blinded by that resplendent blaze of truth, upon which his eagle sight could gaze without injury. This will be acknowledged by every one, who, in perusing the philosophical writings of Plato, is capable of divesting himself of that blind respect for antiquity, by which the learned so frequently suffer themselves to be misled. In confirmation of the propriety of this judgment, we need only refer to the dialogue entitled *Timæus*, a chaotick mass of opinions, which no commentators have yet been able to reconcile or explain." Such are the sentiments of Brucker, in regard to the writings of Plato. Of his philosophy, however, as far as it can be ascertained, amidst this ambiguity of expressions, the following account may be given, He

maintains that there were originally three principles, from which all things proceeded, God, matter, and ideas. God was the principle of intelligence, matter was eternal and infinite, and ideas were the eternal patterns or archetypes, according to which things were formed. Concerning these patterns or archetypes, he writes so obscurely, that his followers and interpreters, have been led to adopt very different opinions. Some, as those of the Alexandrian school, called the latter Platonists, affirm that the whole of Plato's doctrine, on the formation of the world, amounts to nothing more, than that the deity employed his understanding or reason in planning and executing the system of the universe; and consequently by ideas, eicones or paradeigmata, existing in the reason of God, are only meant conceptions in the divine mind. This view of the subject entertained by the latter Platonists, is certainly the only one which renders his doctrine rational or intelligible; since the Deity must have had his plans, before he proceeded to the formation of the universe. In favour of this opinion too, we find no less an author than the learned Dr. Cudworth, who, in his intellectual system, speaks in the following style. After quoting the opinion of Tertullian in his book, *de anima*, which is in these words; *vult Plato esse quasdam substantias invisibiles, incorporeales, supermundiales, divinas et eternas, quas appellat ideas, id est formas et exempla, et causas naturalium istorum manifestorum et subjacentium corporalibus; et illas quidem esse veritates, hæc autem imagines earum*—thus translated by him; Plato conceiveth that there are certain substances, invisible, incorporeal, supermundial, divine and eternal, which he calls ideas, that is, forms, exemplars, and causes of all these natural and sensible things, they being the truths, but the other the images; he proceeds—"Neither can it be denied, that there are some odd expressions in Plato, sounding this way; who, therefore, may not be justified in this, nor I think in some other conceits of his, concerning

these ideas; as when he contends, that they are not only the objects of science, but also the proper and physical causes of all things here below; as for example, that the ideas of similitude and dissimilitude, are the causes of the likeness and unlikeness of all things to one another, by their participation of them. Nevertheless, it cannot be at all doubted, but that Plato himself, and most of his followers, very well understood, that these ideas were all of them really nothing else, but the noemata or conceptions of that one perfect intellect, who was their second hypostasis; and therefore, they could not look upon them in good earnest, as so many distinct substances, existing severally and apart by themselves out of any mind, however they were guilty of some extravagant expressions, concerning them." Others differ in opinion from Dr. Cudworth in this respect; and Brucker asserts, that Plato appears to have meant by his term ideas, something much more mysterious, viz. patterns or archetypes, subsisting by themselves as real beings in the divine reason; as in their original and eternal region, issuing thence to give form to sensible things, and become the objects of contemplation and science to rational beings. Conformably to this notion, Diogenes is said, when once dining at the table of Plato, who was descanting upon the favourite topic of his eternal models, which alone are the objects of science, to have exclaimed with his usual cynical asperity, I see that table, and that goblet, Plato, but I do not see tableity or gobletity; to whom Plato rejoined, that is, because you look at them with the eyes of your body, and not with those of the mind. The question, then, if it were of any importance, as it undoubtedly is not, is likely to remain forever undecided. If notwithstanding the proofs to the contrary, we could believe with Dr. Cudworth and the Platonists of the Alexandrian school, that Plato meant nothing else by his ideas, exemplars or models, but the conceptions of the divine mind, or the plans by which the Creator formed every part of the

universe, the doctrine would not only be rendered intelligible, but perfectly just and philosophical. What is the object of all philosophy, but to investigate the plans, upon which the Creator hath constructed the various parts of nature? What did Newton, when he revealed to us the structure and laws of the solar system; or Locke, when he disclosed and solved the phenomena of the human mind; or Harvey, when he discovered the circulation of the blood, but unfold new views of the secret counsels of the Supreme Being, in the construction of these several departments of the world? Philosophy, which has been denominated the science of causes, might with equal propriety, without involving any of the fancies and sublime visions of Plato, be defined to be an attempt, as far as the human mind is competent to the task, to disclose the secret plans of the Creator, in his adjustment of the several departments, both of the physical and moral world.

In reference to perception, I find nothing satisfactory in Plato. Sense, he defined to be, the passive perception of the soul, through the medium of the body. Visible things, were regarded by him as fleeting shades, and ideas the only permanent substances. These last, he conceived to be the great objects of science, to a mind raised by divine contemplations, above the perpetually varying scenes of the material world. Dr. Reid imagines, however, that he has found a passage in Plato, the only one to which he refers, in confirmation of his doctrines concerning ideas. "Plato," says he, "illustrates our manner of perceiving objects of sense, in this manner. He supposes a dark subterranean cave, in which men lie bound in such a manner, that they can direct their eyes only to one part of the cave. Far behind there is a light, some rays of which come over a wall to that part of the cave, which is before the eyes of our prisoners—a number of persons variously employed, pass between them and the light, whose shadows are seen by the prisoners, but

not the persons themselves. In this manner, that philosopher conceived, that by our senses we perceive the shadows of things only, and not things themselves." The Dr. must have been at extreme difficulty to find his theory of ideas in the doctrine of Plato, before he would have pressed this passage into his service, which is to be found in his seventh book of a republic, and which has certainly no more relation to the subject of perception, than, according to the account given by Le Sage, the cave into which Gil Blas was transported by the robbers. It is strange, that this passage should have been so greatly perverted from its evident import; and it could have been so misconstrued only from inattention to the spirit of Plato's philosophy, and the strain of doctrine on such points, which he keeps up throughout all his works. Dr. Spens, the intelligent translator of his treatise concerning a republic, much more consistently with its drift, considers it as having a correspondence with the doctrine of christianity, about the original blindness and depravity of mankind, and their need of supernatural instruction. "Our author's subterranean cave," says he, "so elegantly described, and so universally known, may be considered as another instance of a conformity in his sentiments, with those contained in revelation. It gives us a lively representation of the ignorance and degeneracy of mankind, in the present state, where numbers are busied in pursuing shadows, as the only real and substantial goods; while they neglect the culture of the mind, and never raise their ideas, to the beauty and perfection of that supreme intelligence, which is the origin, and the end of all." This is a just observation, and the passage of Plato is susceptible of such a turn, and may be naturally improved to the purpose this author contemplated; but I apprehend the immediate intent of Plato, in this portion of his work, may be easily ascertained, by taking into view his peculiar opinions, and the whole strain of his doctrine throughout this particular treatise. He had been

maintaining the propositions, that states would be happy, when they should have philosophers for their rulers, who instead of desiring public employments, would rather fly from them; and these philosophers were men, who instead of being misled by the mere shadows of things, presented from without, by objects which are in a perpetual flux, and from which no real knowledge could be derived, devoted themselves to the contemplation of Supreme Intelligence, and those eternal forms or models which are permanent, as of justice, truth, beauty, &c. He himself furnishes us in the very first sentence, with a key that unlocks the mysteries contained in this allegory; and in allegorical representations, from the natural fertility of his fancy, he seems to take great delight. It begins thus—"After these things now," said I, "compare, with reference to instruction, and the want of instruction, our nature to such a condition as follows." It is evident, that they are those in the cave, and who can see only the shadows of things, who are said to want instruction; and those who are instructed, are they, who ascending to the regions of intelligence, can contemplate things, as they are in their real substantial models. He proceeds—"Consider men as in a subterranean habitation, resembling a cave, with its entrance opening to the light, and answering to the whole extent of the cave. Suppose them to have been in it from their childhood, with chains both on their legs and necks, so as to remain there, and only be able to look before them, but by the chain, incapable to turn their heads around; suppose them to have light of a fire, burning far above and behind them; and that between the fire and chained men, there is a road above them. Along which, observe a low wall, built like that which hedges in the stage of mountebanks, on which they show to men their wonderful tricks. Observe now along this wall, men bearing all sorts of utensils, raised above the wall, and human statues, and other animals in wood, and stone, and all sorts of furniture. Do

you imagine, that such as these see any thing of themselves, or of one another, but the shadows formed by the fire, falling on the opposite part of the cave?" Not to be prolix in my quotations. He continues—After exhibiting them as passing and repassing from the cave to the light above, he gives us the moral meaning, couched in the allegory, as intelligible as language can make it. "The whole of this comparison now," said I, friend Glauco, "is to be applied to our preceding discourse. For if you compare this region, which is seen by the sight, to the habitation of the prison, and the light of the fire in it, to the power of the sun, and the ascent above, and the sight of things above, to the soul's ascent into the region of intelligence, you will apprehend my meaning, since you want to hear it. But God knows whether it be true. Appearances then to me appear in this manner. In the intellectual world, the idea of the good is most remote, and scarcely to be seen; but if it be seen, it is to be deemed, as indeed the cause to all of all things, right and beautiful, generating in the visible world, light and its principle the sun, and in the intellectual world, it is itself the principle, producing truth and intelligence, and that this must be beheld by him, who is to act wisely either privately, or in public." He concludes the application thus—"But what? Do you imagine this any thing wonderful, that when one comes from divine contemplations to human evils, he should behave awkwardly, and appear extremely ridiculous, whilst yet the light is in his eyes, and he is obliged, before he is sufficiently accustomed to the present darkness, to contend in courts of justice or elsewhere, about the shadows of justice, or those statues, which occasion the shadows; and to dispute about this point, how these things are conceived of, by those who have never at any time beheld justice itself?"

These passages are deemed sufficient, unequivocally to explain the meaning of Plato in this celebrated allegory;

and to show, that it has not the most remote connection with the subject of perception. With this view of the subject, Brucker's account entirely corresponds. Plato's conceptions on this subject, are beautifully expressed," says he, "in a passage of his Republic, in which he compares the state of the human mind, with respect to the material and intellectual world, to that of a man, who in a cave, into which no light can enter but by a single passage, views upon a wall opposite to the entrance, the shadows of external objects, and mistakes them for realities. So strongly was his imagination impressed with this conception, that in the election of magistrates for his republic, he required that no one should be chosen, who had not by the habitual contemplation of the world of ideas, attained a perfect power of abstraction."

From Plato, we proceed to examine the sentiments of Aristotle. Hermolaus Barbarus, bishop of Aquileia, is said to have consulted the devil, to discover the meaning of Aristotle's entelecheia, and as he never made report of any satisfactory answer returned by his satanic majesty to his interrogatories, the word still remains unexplained to puzzle the heads, and addle the brains of learned Sorbonnists. Scarcely any one since the revival of learning, has undertaken to become interpreter of the opinions of this philosopher, who has not been sensible of the extreme difficulty of ascertaining them; of the very great darkness in his modes of reasoning; and of the obscurity, in some instances, impenetrable obscurity of his style.

Dr. Reid speaks of his affected obscurity; but perhaps, no one ever wrote, who appears to be more free from the charge of affectation. He is one of the driest, but at the same time, most serious and unostentatious of all writers; and composes like a pure intelligence, who considers language merely as a medium, by which his thoughts are to be communicated; and seems utterly to lose sight of all the usual ornaments of

style, or embellishments of fancy. His extreme obscurity in many parts of his works, probably may be explained, from the sententious brevity of expression, for which he is so remarkable; and from a consideration which has not, I think, been sufficiently adverted to, that during the prevalence of such a philosophy as his, there must have been many combinations of ideas, and many terms and phrases to express them, which, although perfectly familiar to his contemporaries, and easily comprehended by them, can never be restored to us, from the oblivion into which they have sunk, and therefore must forever remain unintelligible. Amidst this darkness, however, it is to be remarked, of conception and expression, there occasionally springs up a clear and wonderful light, sufficient to disclose to us the manly force of his reason, and the amazing depth of his penetration. His insight into all the departments of nature, which successively came under his investigation, and he cultivated a large circle of sciences, was wonderful; and his philosophy altogether for the times in which he lived, and the very scanty portion of aid which he could have received from the hands of contemporary labourers, a stupendous monument of his genius. What profoundness and comprehension of mind, what close and intense thought, what patient and persevering efforts, in the adjustment and construction of a system, does his logic alone display? It exhibits at once all the difficulty in the construction, the magnificence, and the uselessness of a pyramid.

In reference to the subject of perception, although it is not to be denied, that on this point also, there is occasionally great obscurity in his phraseology; yet it is sufficiently clear that, as far as he advances in the investigation, his opinions exactly coincide with those of Mr. Locke. Like the English metaphysician, he maintains, that all our ideas originate in the perceptions of sense; that the action of the several bodies upon our external organs, through their media, is necessary

to perception; and is the cause of it; and, moreover, that to the different modifications of motion produced in our corporeal system by the qualities of bodies, is to be ascribed the difference in our sensations. Thus light passing from the object to the eye occasions vision; the effluvia of bodies striking upon the nostril, occasion the sensation of smell; and undulations of air upon the ear, those of sound, and so of the rest. Thus far he travelled with Mr. Locke, on the road that leads through the dark and shadowy fields of the science of mind. But if Mr. Locke was acquainted with the works of Aristotle, and I find no proofs from his productions that he was, except as they were taught in the schools, he could have derived very little advantage from the illustrious Greek, as he has merely left a few hints on those topics, which Mr. Locke has fully investigated. The first, at best, can be considered but as having raised the vestibule, while the latter has completed the magnificent temple of moral science. But to revert to our subject. Not a single passage can be adduced from Aristotle, that shows him to have believed, that an idea is an image, or representative of the outward object in the mind; and which alone, in the act of perception, is contemplated by the mind. The only passage referred to by Dr. Reid, in proof of his holding what he calls the common theory of ideas, is in his 2d book, *de anima*, ch. 12. "He defines a sense," says the Dr. "to be that which is capable of receiving the sensible forms or species of objects, without any of the matter of them; as wax receives the form of the seal without the matter of it. The forms of sound, of colour, of taste, and of other sensible qualities, are in like manner received by the senses.

It seems to be a necessary consequence of Aristotle's doctrine, that bodies are constantly sending forth in all directions, as many different kinds of forms without matter, as they have different sensible qualities; for the forms of colour must enter by the eye, the forms of sound by the ear, and so of

the other senses. This accordingly was maintained by the followers of Aristotle; though not, as far as I know, expressly mentioned by himself. They disputed concerning the nature of those forms or species, whether they were real beings or non-entities; and some held them to be of an intermediate nature between the two. The whole doctrine of the Peripateticks and schoolmen, concerning forms substantial and accidental, and concerning the transmission of sensible species, from objects of sense to the mind, if it be at all intelligible, is so far above my comprehension, that I should perhaps do it injustice, by entering into it more minutely. Mallebranche in his *Recherche de la verite*, has employed a chapter to show, that material objects do not send forth sensible species of their several sensible qualities."

It will be remarked, in this passage, that the author considers the whole doctrine of sensible species as unintelligible, and above his comprehension; and moreover, that the necessary consequence from Aristotle's doctrine, viz. that bodies are constantly sending forth in all directions, as many different kinds of forms without matter, as they have different sensible qualities, although maintained by his followers, is nowhere expressly mentioned by Aristotle. Now, under these circumstances, would it not have been natural to conclude, that no such doctrine could be asserted by such an acute thinker, who was not likely to be contented with an incomprehensible jargon, whatever be the interpretation given of him by the schoolmen? Accordingly we find that in the chapter abovementioned, Aristotle, so far from maintaining the opinion ascribed to him of sensible species, is simply asserting, that in every instance of perception, there must be an action of the several media upon the organs of sense, as of a seal upon wax; as for instance, of light upon the eye, of agitations of air upon the ear, &c. Would it not be strange if he asserted the doctrine, that sensible species, or forms without matter, passed through the organ and entered into the

mind; when he is nowhere found expressly stating it, but only establishing principles from which this is conceived to be an inference? Could he have failed to discern the glaring absurdity of such expressions as, the forms of sound, of colour and taste, passing through the organ, and making an impression upon the mind? Nothing can be more certain to my mind, than that all he maintained, is, that in perception there is an action necessary upon the organ through a medium, and to that action upon the organ, there is annexed a thought of the mind, and this is nothing more than is true. Hence in his treatise *de Cælo*, we find him reproving Democritus, as is remarked by Dr. Gillies, for saying, that if there was a perfect vacuum, we should see a pissmire in the Heavens, asserting in contradiction to this, that if there were a vacuum, we could see nothing, as the operation of some medium upon the organs is essential to vision, as well as every other perception. His term, *eidos*, totally distinct from the idea of Plato and the Pythagoreans, is not always used by him with distinctness and accuracy, but when he means to denote by it that which is occasioned in the mind by the action of the several media of bodies, upon our external organs, it is clear that he considers it as equivalent to our word, thought, sensation, or perception. That he does not admit that there is any intermediate object between the mind that perceives, and the object perceived without, appears perfectly certain, and we find expressly affirmed by Dr. Gillies, who appears to have studied the whole of Aristotle's works, with more care and attention, than either Dr. Reid, or the writer of this article. "To prevent the possibility of mistake," says Dr. Gillies, in one of his notes to the analysis of the works of Aristotle, "to prevent the possibility of mistake or obscurity in the above note, it is necessary to observe that the word, *idea*, in English is popularly used, not merely to denote an object of thought, but thought itself. To deny ideas in this latter sense is to deny thinking. But

this is not the philosophical meaning of the word, as understood by the pretended followers of Aristotle, any more than by Locke in his essay on the Human Understanding: by whom ideas are said to be the objects immediately present to the mind in thinking. No; Aristotle expressly denies the presence or existence of any object in the mind, when it theorises or thinks, distinct from the act of the mind itself." If Dr. Gillies, had studied Mr. Locke and other philosophers, as well as he studied Aristotle, he would have found that they as well as Aristotle, were free from the charge, of maintaining the opinion which he denies to have been held by the Greek philosopher. "Aristotle," proceeds Dr. Reid, "held it as a maxim, that there is nothing in the intellect which was not at first in the senses. He thought every object of human understanding enters at first by the senses, and that the notions got by them, are by the powers of the mind refined and spiritualized, so as at last to become objects of the most sublime and abstracted sciences." This same statement is frequently repeated by the Dr., and seems to be the same, which Father Mallebranche had long before given of the philosophy of the schools. *La plus commune opinion, says Mallebranche, ch. 2, book 3d, est celle des Peripateticiens qui pretendent, que les objects de dehors envoient des especes qui leur ressemblent, et que ces especes sont portées par les sens extérieurs jusqu'au sens commun; ils appellent ces especes-là impresses, parceque les objets les impriment dans les sens extérieurs. Ces especes impresses étant matérielles et sensibles, sont rendues intelligibles par l'intellect agent ou agissant, et sont propres pour être reçues dans l'intellect patient. Ces especes ainsi spiritualisées sont appelées especes expresses, parcequ'elles sont exprimées des impresses; et c'est par elles que l'intellect patient connaît toutes les choses matérielles.*" It appears, therefore, that the doctrine here stated by Mallebranche, is undoubtedly, that which was taught in the schools under the venerable name of Aristotle,

but I suspect it would put any one to his wits' end to find it in the works of the Stagyrte. The whole process by which these sensible species are said to be taken up by the active intelligent, converted into intelligible species, or so refined and spiritualized as to become objects of the most abstract and sublime sciences, is so like a process of distillation of ardent spirits from cider, or the preparation of brown and loaf sugar from the sugar-cane; as to have rendered the whole theory so ridiculous, that nothing could have preserved it from contempt, but the illustrious name of him who was supposed to be its author. It never could have been the doctrine of that profound philosopher, and could have been hatched only in the brains of the schoolmen, which teemed with crudities and follies. Dr. Gillies denies that there is any where to be found in the works of Aristotle, that maxim so currently received as his, *nihil est in intellectu quod non prius fuerit in sensu*, and of course the whole of the doctrine built upon this foundation, must fall to the ground, and can never be ascribed to Aristotle as the author.

The sentiments of Des Cartes will be found exactly accordant to those of Aristotle and Locke. Too much praise cannot be bestowed upon Des Cartes, for having had the boldness to undertake, and the capacity to execute the task of freeing the world from the jargon of the schools, and, as was said of Socrates, in ancient times, having called down philosophy from the clouds of hard terms and incomprehensible subtilties, and taught her to converse intelligibly with men. He appears in many parts of his works to have been deeply sensible of the utter incompetency of the method of philosophising prevalent among the schoolmen, to a just and true investigation of nature. This was an opinion so universally prevalent among the learned of this age, that it could not have been without foundation. They all seem, however, to have evidently done great injustice to Aristotle, by confounding his principles of philosophy, with those of his miserable

interpreters, the schoolmen. It is really curious to remark, that while they were inveighing with so much vehemence and force, against what they considered as the Aristotelian philosophy, they were so faithfully following in the track of its author. I by no means pretend, that Aristotle prosecuted the plan of inquiry proposed by lord Bacon, in the extent to which it was recommended by him, and I shall in future take the opportunity of pointing out the distinction between their methods of investigation; but who of them has rigidly conformed to that system? Des Cartes made many experiments, but yet mixed hypotheses with his philosophical solutions, and Mallebranche followed him, as has been remarked by Dr. Reid, without servile imitation; and even Bacon in the specimens he has given of philosophical disquisitions has not strictly conformed to his own maxims. Newton and Locke only together with subsequent philosophers, have been able to carry into practice that great plan, which Bacon fully delineated, and the outlines of which seem to have presented themselves to Des Cartes and Mallebranche.

Aristotle had accurately drawn the lines of distinction between the mind and body, between the properties and operations of the one, and those of the other, and in this respect Des Cartes may be considered as having improved upon the labours of his predecessor. He made the distinction between the primary and secondary qualities of bodies which had been unnoticed by Aristotle, although not with the accuracy of Mr. Locke; as under the head of primary qualities he has evidently included some that are secondary. With the vortices in which Des Cartes supposed matter to move, in order to account for the existence and operations of the material world, or the other parts of that philosophy, which obtained through his ingenuity and talents such a complete triumph over that of the schools, I have nothing to do at present. My purpose is to ascertain the doctrine he held on the subject of perception. "The writings of

Des Cartes, says Dr. Reid, have in general a remarkable degree of perspicuity; and he undoubtedly intended that, in this particular, his philosophy should be a perfect contrast to that of Aristotle; yet in what he has said in different parts of his writings, of our perception of external objects, there seems to be some obscurity and even inconsistency. Whether owing to his having had different opinions on the subject, at different times, or to the difficulty he found in it, I will not pretend to say." We do not hesitate to say that the whole of the difficulty the Dr. finds in understanding the views of Des Cartes on the point referred to, did not arise from any obscurity, or inconsistency in his language at different times, for on this subject he expresses himself with the same perspicuity as at other times, but to the preconceived opinions of the Dr. himself. He expected to find in him the grand philosophical heresy of images in the mind, of an idolatrous worship of which all the philosophers are accused; and when Des Cartes expresses himself either in the terms of art used in the schools, or according to ordinary acceptance of words, as when we say we could form no image or picture of a thing in the mind, he discovers some ground for the accusation; but when Des Cartes explains himself with technical accuracy, the fallacy appears, and his real sentiments are exhibited. Dr. Reid himself says, that Anthony Arnould, Doctor of the Sorbonne, in his controversy with Mallebranche, denied that Des Cartes held those opinions about ideas which that Father ascribed to him, and declares that he considered them as nothing more than the perceptions or thoughts of the mind. It would give me great pleasure to obtain a perusal of the work of Arnould, but as I have never yet been able to see it, I must content myself with remarking, that nothing appears to me more certain than that his representation of Des Cartes's doctrine was just. "There are two points in particular, continues Dr. Reid, speaking of Des Cartes, wherein I can-

not reconcile him with himself. The first, regarding the place of the ideas or images of external objects, which are the immediate objects of perception; the second with regard to the veracity of our external senses. As to the first, he sometimes places the ideas of material objects in the brain, not only when they are perceived, but when they are remembered or imagined; yet he sometimes says, that we are not to conceive the images or traces in the brain, to be perceived, as if there were eyes in the brain; these traces are only the occasions on which by the laws of the union of soul and body, ideâs are excited in the mind; and therefore, it is not necessary that there should be an exact resemblance between the traces, and the things represented by them, any more than that words or signs should be exactly like the things signified by them. These two opinions, I think cannot be reconciled. For if the images or traces in the brain are perceived, they must be the objects of perception, and not the occasions of it only. On the other hand, if they are only the occasions of our perceiving, they are not perceived at all." Such is the reasoning of Dr. Reid, concerning Des Cartes' statement, which he will have to be inconsistent with itself. Now we think nothing can be more easy than to loose Des Cartes from the horns of this notable dilemma. "If the images or traces in the brain are perceived they must be the objects of perception, and not the occasions of it only. On the other hand, if they are only the occasions of our perceiving, they are not perceived at all." Now we have only to reply in defence of Des Cartes, that he no where maintains that the images or traces in the brain are ever perceived, for that would be a frivolous assumption in attempting to explain the phenomenon of perception, and leaving it as much unsolved as before; but that he unequivocally declares, with all the best philosophers, that they are the traces made in the brain by the action of the several media of bodies, which cause, or occasion perception in

the mind. Hear him speak in his *Dioptricks*, chapter sixth. After explaining by means of a diagram, the human eye, and the formation of an image upon the retina, which image he supposes to be transferred from the bottom of the eye to the exterior coat of the brain, and to be there distinctly formed also, which we admit to be a mere hypothesis, unsupported by fact or experience; for although, we know that an image is formed upon the retina, we have no proof that it is extended to the brain also; he proceeds. “*Licet autem hæc pictura sic transmissa in cerebrum, semper aliquid similitudinis ex objectis, a quibus venit, retineat; non tamen ab id credendum est ut supra quoque monuimus, hanc similitudinem esse quæ facit ut illa sentiamus; quasi denuo alii quidam oculi in cerebro nostro forent, quibus illam contemplari possemus. Sed potius motus esse a quibus hæc pictura componitur, qui immediate in animam nostram agentes, quatenus illa corpori unita est, a natura instituti sunt, ad sensus tales in ea excitandos—Quod latius hic exponere libet—Omnes qualitates, quas in visus objectis percipimus, ad sex primarias reduci queunt, ad lumen scilicet, colorem, situm, distantiam, magnitudinem et figuram. Et primo quantum ad lumen et colorem, quæ sola proprie ad sensum visionis pertinent, cogitandum illam animæ nostræ naturam esse, ut per vim motuum, qui in illa cerebri regione occurrunt, unde tenuia nervorum opticorum fila oriuntur, luminis sensum percipiat: per eorundem autem motuum diversitatem, sensum coloris. Quemadmodum per motus nervorum, auribus respondentium, sonos dignoscit; et ex motibus nervorum linguæ, varios sapes; et in universum, ex motu nervorum totius corporis moderato, quandam titulationem sentit; et dolorem ex violento; quum interea in his omnibus, similitudine nullâ opus sit, inter ideas, quas illa percipit, et motus qui earum sunt causæ. Here we perceive that, although in the act of vision and the acts of the other senses, he supposes motion to be produced upon*

the nervous coat and the brain, and moreover in vision, an image of the object to be formed upon the exterior coat of the brain, corresponding to that upon the retina, of which he had no proof; yet he asserts that we are not to suppose that the mind perceives that image as if it had eyes to contemplate it, but that it is by certain motions communicated to the brain, and some effect produced upon the mind, by the bodily organs which are connected with it, that perception is caused or occasioned. This will be found to be the doctrine of Des Cartes, and this is the doctrine, and not that of images in the mind or brain, the only immediate objects of perception, as affirmed by Dr. Reid, in which all the philosophers discover such unanimity of opinion, and whose unanimity affords a strong presumption, that when their opinion is rightly understood, it is founded in truth and nature. It seems to be a high degree of presumption to conclude, that all other persons but ourselves, however illustrious, should have been misled by prejudice, and blindfolded in their inquiries, by a frivolous and ridiculous theory. "It is to be observed, however," says Dr. Reid, "that Des Cartes rejected a part only of the ancient theory, concerning the perception of external objects by the senses, and that he adopted the other part. That theory may be divided into two parts; the first, that images, species, or forms of external objects, come from the object, and enter by the avenues of the senses to the mind; the second part is, that the external object itself is not perceived, but only the species or image of it in the mind. The first part, Des Cartes and his followers rejected, and refuted by solid arguments; but the second part, neither he nor his followers, have thought of calling in question; being persuaded that it is only a representative image in the mind of the external object, that we perceive, and not the object itself. And this image, which the Peripateticks called a species, he calls an idea, changing the name only, while he admits the thing." The Dr. seems determined, that Des Cartes,

in spite of any thing he can say or do, shall be found guilty of abetting the ideal theory. If he rejected the sensible species of the Peripateticks, on account of its absurdity and incomprehensibility, it would seem a good presumption, that he would not immediately admit another doctrine, that of images in the brain, the immediate objects of perception, equally absurd and incomprehensible; and moreover, when a new difficulty would now be presented, to account for their intromission into the mind or brain, since they were no longer admitted to derive their origin from external objects, and to travel through the organs of sense to the sensorium. But that we may not spend time, without advantage, in the discussion of these matters, let us introduce a few more passages from the works of Des Cartes, that will serve to elucidate his views. I might multiply passages without limit, but I shall content myself with a very few; leaving it to others, to examine him more minutely, if they entertain doubts of his opinion. In chap. 4, sect. 6, of his *Dioptricks*, he says—*Observandum præterea, animam nullis imaginibus ab objectis ad cerebrum missis egere ut sentiat, (contrâ quam communiter philosophi nostri statuunt,) aut ad minimum, longe aliter illarum imaginum naturam concipiendam esse quam vulgo fit. Nec alia causa imagines istas fingere eos impulit, nisi quod viderent mentem nostram efficaciter pictura excitari ad apprehendendum objectum illud, quod exhibet: ex hoc enim judicarunt, illam eodem modo excitandam, ad apprehendenda ea quæ sensus movent, per exiguas quasdam imagines in capite nostro delineatas. Sed nobis contra est advertendum, multa præter imagines esse, quæ cogitationes excitant, ut exempli gratia, verba et signa, nullo modo similia iis quæ significant.* Here the reader cannot fail to observe, that while Des Cartes is combatting the doctrine of the schoolmen, that there must be images in the brain, resembling the qualities of objects without, and affirming that there is no necessity for such similitude, to account for perception;

yet he considers these images, or representatives of objects, if there be such, not as the objects of perception to the mind, but as the causes of perception.

Multa præter imagines esse quæ cogitationes excitant, exempli gratia, verba et signa. Whatever images, therefore, Des Cartes admits to be in the brain, whether distant or remote, or strict in their similitude to the objects represented, he evidently regards not as the objects of perception, but as constituting a part of that train of action in our corporeal organs, which cause or occasion perception. Eodem igitur modo imagines, he continues, in cerebro nostro formatæ, considerandæ sunt, et notandum tantummodo quæri, quæ ratione animam moveant, ad percipiendas diversas illas qualitates objectorum e quibus manant, non autem quomodo ipsæ iis similes. Ut quum cæcus noster varia corpora baculo suo impellit, certum est ea nullas imagines ad cerebrum illius mittere; sed tantum diversimodè movendo baculum, pro variis qualitatibus, quæ in iis sunt, eadem opera manus etiam nervos diversimode movere, et deinceps loca cerebri, unde ii descendunt; cujus rei occasione mens totidem diversas qualitates in his corporibus dignoscit, quot varietates deprehendit in eo motu, qui ab iis in cerebro excitatur. Again, chap. 5, he says—Manifestè itaque videmus, non opus esse ad sentiendum, ut anima contempletur ullas imagines quæ reddant id ipsum quod sentitur. Finally, not to be tedious with quotations. In his Treatise on the Passions, part 1, article 23—Perceptiones quæ referuntur ad res extra nos positas, scilicet ad objecta sensuum nostrorum, producuntur, (saltem cum nostra opinio falsa non est) ab his objectis quæ excitando quosdam motus in organis sensuum externorum, excitant quoque nonnullos motus opera nervorum in cerebro, qui efficiunt ut anima illa sentiat; sicuti cum videmus lumen tedæ et audimus sonum campanæ, hic sonus et hoc lumen sunt duæ diversæ actiones, quæ, per id solum quod excitant

duos diversos motus in quibusdam ex nostris nervis et eorum ope in cerebro, dant animæ duas distinctas sensationes.

Mallebranche embraced the Cartesian philosophy, to which he added some peculiar tenets of his own invention. Having a mind prone to philosophical pursuits, and animated by an ardent piety, he resolved all the operations of nature, into the immediate volition and agency of the Deity. His doctrine of seeing all things in God, savours of mysticism and enthusiasm, and is, undoubtedly, as Mr. Locke objects to him, utterly incomprehensible. The difficulty with him, seems to have been to explain the manner, in which the soul perceives objects that are at a distance from it, as the sun, moon, stars, and objects revealed to us by sight. The passage so often cited from him, contains his views on this point. "I suppose," says he, "that every one will grant, that we perceive not the objects that are without us, immediately and of themselves. We see the sun, the stars, and an infinity of objects without us; and it is not at all likely, that the soul sallies out of the body, and, as it were, takes a walk through the heavens, to contemplate all those objects. She sees them not, therefore, by themselves; and the immediate object of the mind when it sees the sun, is not the sun, but something which is intimately united to the soul; and it is that which I call an idea. So that by the word idea, I understand nothing else here, but that which is the immediate object, or nearest to the mind, when we perceive any object. It ought to be carefully observed, that in order to the mind's perceiving any object, it is absolutely necessary that the idea of that object, be actually present to it. Of this it is not possible to doubt. The things which the soul perceives are of two kinds. They are either in the soul, or they are without the soul. Those that are in the soul are its own thoughts, that is to say all its different modifications. The soul has no need of ideas for perceiving these things. But with regard to things without the soul, we cannot per-

ceive them but by means of ideas." While Mallebranche rejected the doctrine of the Peripateticks about sensible species, he here broaches one having a natural conjunction, and close affinity to it, as far as it is made to extend. Had he spoken in this manner of all our ideas of external objects, and had other philosophers joined in with him, then the charge of Dr. Reid against them, would have been easily sustained. So far, however, is this from being the case, that we find Mr. Locke expressly animadverting upon his sentiments in this particular, and telling him that his doctrine of seeing all things in God, was not only unintelligible, but was unsatisfactory as well as unnecessary, as a solution of the phenomenon of seeing. It was as unnecessary he declares, to have recourse to the agency of God in vision, as it would be in the other perceptions of sense; since he has as distinct a conception, how rays of light coming from a body, and striking upon the eye, and thus occasioning an action in the brain, may give us the perception of visible objects, as of the manner in which taste is produced by sapid bodies, acting upon the palate, or sound, by the undulations of air striking upon the ear. The idea of Mallebranche undoubtedly was, that when we look at the sun, moon, and stars, and other things visible in nature, we do not perceive those objects themselves, they being not immediately present to the soul, but we perceive the ideas or images of them, which are immediately present to it. If the question be asked, where do these ideas exist? the answer is in God. If the question be renewed, in what way do we perceive them, thus subsisting in the divine mind, the answer again is, upon occasion of the presence of the sun, moon, &c. God enables us by his action upon our minds, to perceive these images or representatives of things, that exist in him. It is easy to perceive that a system of this kind, utterly excludes, as far as the argument extends, an exterior world, as the Creator could give us these ideas, without calling the objects into

existence at all; and since he does nothing in vain, and accomplishes every end by the most compendious means, there would be the best reason to conclude, that no such objects exist. In order, however, that we properly determine, how far the doctrine of Mallebranche is liable to the objections of Dr. Reid, let us endeavour exactly to ascertain it, in its whole extent. We have seen that he maintains, that the intervention of ideas, which are immediately and intimately present to the mind, is necessary to our perception of visible objects, through the organ of the eye. This doctrine, however, it is to be remarked, absurd as it is, extends only to those objects, that cannot come under the cognizance of any of our other senses, as for instance, those which are so remote, that we can neither taste, smell, hear, or touch them, but which can be revealed to us only by the sight. Let us hear him speak for himself, as he certainly must be the best interpreter of his own opinions—*Il est certain que l'ame voit dans elle-meme, et sans idées, toutes les sensations et toutes les passions dont elle est actuellement touchée, le plaisir, la douleur, le froid, la chaleur, les couleurs, les sons, les odeurs, les saveurs, son amours, sa haine, sa joye, sa tristesse et les autres; parceque toutes les sensations et toutes les passions de l'ame ne representent rien qui soit hors d'elle, qui leur ressemble, et qui ce ne sont que des modifications dont un esprit est capable; mais la difficulté est de savoir, si les idées qui representent quelque chose qui est hors de l'ame, et qui leur ressemble en quelque façon, comme les idées du soleil, d'une maison, d'un cheval, d'une riviere &c. ne sont que des modifications de l'ame; de sorte que l'esprit n'ait besoin que de l'uimeme, pour se represente toutes les choses qui sont hors de lui.*

Here we see that Mallebranche, unfounded as his theory is, admits, that without the intervention of ideas or images, we may have perceptions of all the secondary qualities of bodies, as well as the properties and operations of our own minds.

Of all that endless store of thoughts, therefore, with which the capacious mind of man is replenished, the only cases in which he supposes the interposition of ideas necessary as immediate objects of perception, are those of the extension and figures of bodies, as revealed to us by sight. So easily does that system vanish, which ascribes to philosophers the doctrine, that all our ideas of outward objects are the images or representatives of them, and the only immediate objects of perception! Even the opinions of Mallebranche, who does not appear to have been able, entirely, to disentangle himself from the subtilties and absurdities of the schools, are but in a slight degree tinged with it.

I pass over the treatise of Norris, as unworthy of a moment's consideration, as he has only taken hold of the weakest, and most indefensible part of Father Mallebranche's system, whose opinions he embraced, and endeavoured to recommend it to attention by a long dissertation, which can only serve to expose it to contempt and ridicule. In his hands the theory of seeing all things in God, which in its original author, is made to rest upon the foundation of a specious and ingenious philosophy, degenerates into a fantastic and vapoury enthusiasm. Hartley's attempt to explain all the phenomena of the human mind, upon the plan of vibrations and vibratancies, or minor vibrations in the medullary substance of the brain, is unworthy of the philosophy of modern times, or the Baconian age of science. He commences with an hypothesis, unsupported by a single fact or experiment; and as the whole superstructure rests upon this basis, so sandy a foundation cannot long support its edifice.

Dr. Priestley remarks, that the work of Dr. Hartley opened a new world to him. My feelings upon reading it have been very different, as I have always found it a large demand upon my patience to toil through its pages. What a delight to turn from the perusal of such a writer, where un-

real objects and visionary scenes, are made to float before the fancy, like those which are presented in a dream, or amidst the delirium of a fever, to the pure and clear light of Mr. Locke's treatise! Here, indeed, we find the moral world, unfolded to us in all the beauty and magnificence, in which it rose under the hands of its Creator! Here we follow the author as our guide, with increasing admiration; while as the true interpreter of nature, he conducts us through the dark and shady walks of metaphysical science, and discloses to us the wonders, which are exhibited in this department of nature.

Des Cartes made the pineal gland the seat of the soul, and Sir Isaac Newton, expresses himself in a query to this effect. "Is not the sensorium of animals, the place where the sentient substance is present, and to which the sensible species of things, are brought through the nerves and brain, that there they may be perceived by the mind present in that place? And is there not an incorporeal, living, intelligent, and omnipresent being, who, in infinite space, as if it were in his sensorium, intimately perceives things themselves, and comprehends them perfectly, as being present to them; of which things, that principle in us which perceives and thinks, discerns only in its little sensorium, the images brought to it by the organs of the senses." These expressions have been brought to favour the doctrine, that all the philosophers received the ideal theory; but it is evident that Sir Isaac Newton, in this case is merely using the language of the schools, without probably having studied or weighed well the technical import of the expressions, and that he intends nothing more, than to propose it as a question, according to his usual modesty, when he did not think the proposition he was enunciating, susceptible of demonstration from any principles of science known at the time; whether the sensorium of animals may not be the seat, or as Mr. Locke calls it, the presence chamber of the soul, in which through the inter-

mediation of the senses, it receives its notices of external objects. Without probably having ever taken the pains to render himself master of the subject, he merely couches his ideas in the prevalent phraseology of the schools. At this there is no cause of wonder, since the language even of Mr. Locke himself, who had so thoroughly studied and investigated the subject, is occasionally tinged with the same modes of expression, and even when his doctrine is substantially correct. Similar observations will apply to what Dr. Clarke has written, in reference to perception. Neither he nor Newton, had devoted sufficient attention to that subject, thoroughly to understand it, and therefore in speaking about it, merely indulged themselves in the current style of the day. Does not this show, that if Mr. Locke had not obtained more just conceptions on these points, he would have left his opinion equally unambiguous?

“Dr. Clarke,” says Dr. Reid in his letters to Leibnitz, has the following passages—“Without being present to the images of the things perceived, it (the soul) could not possibly perceive them. A living substance can only there perceive where it is present, either to the things themselves, (as the omnipresent God is to the whole universe,) or to the images of things, as the soul of man is in its proper sensory.”

“Nothing can any more act or be acted upon, where it is not present, than it can be where it is not. We are sure the soul cannot perceive what it is not present to, because nothing can act or be acted upon where it is not.” This is unequivocally maintaining the ideal theory, in its full extent, as was done by the schoolmen; and if Mr. Locke and the philosophers had spoken in this way, there could have been no controversy as to their opinion. If Dr. Reid were not in the habit, in order to save himself the trouble of discriminating the opinions of philosophers from each other, of confounding them all together, and rendering the whole order responsible for the errors and fallacies of each one, he need

not have taken the pains of answering Dr. Clarke's argument on this point. That nothing can either act or perceive where it is not, is a self-evident proposition, but what metaphysicians who have studied the subject, ever maintained that the mind could not perceive an object to which it was not immediately present, except in the cases that have been before mentioned? No such doctrine is known to Aristotle, Des Cartes or Locke. All that these philosophers hold, is, that the soul is united to the organs of the body, and that to the action produced in those organs by the several media of outward objects, a perception of these objects is annexed. While Dr. Reid, however, in order to give colour to his charge against the metaphysicians, mentions the opinions and quotes the language of Dr. Clarke, in his letters to Leibnitz, how happens it that he has neglected to furnish us with the reply of Leibnitz? The last mentioned writer in his answer to Clarke, has the following expressions. *Je ne demeure point d'accord des notions vulgaires, comme si les images des choses étoient transportées par les organes, jusqu' à l'ame Car il n'est point concevable par quelque ouverture, ou par quelle voiture, ce transport des images depuis l'organe jusque dans l'ame se peut faire. Cette notion de la philosophie vulgaire, n'est point intelligible: comme les nouveaux Cartesiens l'ont assez montré. L'on ne sauroit expliquer comment la substance immatérielle est affectée par la matiere: et soutenir une chose non intelligible la dessus, c'est recourir a la notion scholastique chimérique de je ne sai quelles especes intentionnelles, inexplicables, qui passent des organes dans l'ame. Ces Cartesiens ont vû la difficulté, mais ils ne l'ont point résolue; ils ont eu recours à un concours de Dieu qui seroit miraculeux en effet. Mais je crois d'avoir donné la véritable solution de cette Enigme. Whatever we may think of the system of Liebnitz, of which he here expresses so favourable an opinion himself, it cannot but be perceived that there were philosophers before the rise of the Scottish*

school of metaphysics, who thought it idle to attempt to explain, how an immaterial substance can be affected by matter, or perception is occasioned, and who considered the doctrine of sensible species as unintelligible and absurd.

CHAPTER V.

The Theory of Bishop Berkeley.

BISHOP BERKELEY has rendered himself celebrated by endeavouring to disprove the existence of an external world. Pursuing an opposite course from that of Don Quixotte, who converted his fantasies into realities, he would reduce every object of real nature, the sun, moon, stars, &c. to a mere collection of ideas or unreal images. The world has certainly been disposed to receive with great good humour, and treated with extraordinary lenity, this attempt of the Bishop to overturn the evidence of the senses, and deprive it of every object which seems most dear to it. Whether this effect has resulted from respect for the character of an author, who was said by the poet, to have possessed every virtue under Heaven, or from a willingness to witness a display of ingenuity and sophistry, on a subject, not likely in its consequences to prove injurious to any one, I cannot pretend to say; but certain it is, that attempts of this nature are more calculated than any other kind of disquisition, to bring the science of metaphysics, one of the most noble and useful that can be cultivated, into utter disrepute and contempt with the sober and reflecting part of mankind. "There is no subject," says Fontenelle, "on which men ever come to form a reasonable opinion, until they have once exhausted all the absurd views which it is possible to take of it. What follies, he continues, should we not be repeating at this day, if we had not been anticipated in so many of them by the ancient philosophers! In addition to the sentiment of Fontenelle, that whenever any subject has been brought into dis-

cussion among philosophers, the true doctrine has been invariably attended by every folly and absurdity, which could be conceived; it may be remarked, that the generations of men, instead of improving upon the lessons taught them by their predecessors, have ever been ready to travel the same round of follies and absurdities with them. Not a system of philosophy has been broached in modern times, that had not its archetype in the ancient world. Pyrrho and his disciples are said to have been so firmly convinced, that every object of sense was mere fantasy, and that the whole order of the exterior world was mere scenic representation and delusions of the senses, that they would not turn out of the way to avoid a carriage, and to keep themselves from falling down a precipice. In this wise fraternity we discern the prototypes of Berkeley, Hume, and their followers, if they ever had any. It is impossible to believe that Berkeley, could have embraced in good faith and sincerity, a doctrine so palpably and preposterously absurd. Mr. Hume evidently sports himself with the indulgence of sceptical doubts, or if he is ever serious, it is with the express purpose of unsettling the foundations of all truth and certainty.

Whatever may be thought of Mr. Hume for attempting to prove, that there is neither matter nor mind in the universe, it must be allowed to have been a noble undertaking for a Bishop, to overturn the evidence of the senses. A people who could be so sceptical as to disbelieve the existence of an exterior world, would find such a state of mind, a rare preparation for a reception of the doctrines of Christianity. It is curious to see how the Bishop endeavours to invalidate the force of the charge of scepticism, which he saw likely to be alleged against him. In this subterfuge, we see a specimen of that subtilty and power of making the worse appear the better reason, which we think, besides great neatness and force of expression and perspicuity of style, is the only thing remarkable in the essay. While we make this concession, how-

ever, in favour of the talents of the Bishop, we cannot but be so faithful to our own sentiments as to declare, that we have never been able to read his pieces through, without a painful effort and much impatience, and that we always felt much less disposed to lenity and indulgence, in our strictures upon those performances, than the literary public appear generally to have been. He may impose upon the ignorant and undiscerning, but to those who are acquainted with the science of mind, the veil of his sophistry is too thin to conceal the fallacies which he strives to palm upon his readers. In his dialogue entitled *Hylas and Philonous*, which is his best treatise upon the subject, where he puts forth all his strength, Hylas, who is the advocate of an exterior world, is a mere man of straw, set up to be knocked down at pleasure, or at least is too complaisant an antagonist, to press his argument with much force or vehemence against his companion. See, in the beginning, how the Bishop vindicates his doctrine against the allegation of scepticism. Philonous defines a "sceptic to be a man who doubts of every thing. One who firmly believes, therefore, that there is no exterior world, cannot be called a sceptic."

It must be admitted that this is an admirable definition, and a still more admirable argument. According to this reasoning, a man who firmly believes that there is no God, but that the universe was formed by a fortuitous concourse of atoms or existed from eternity, that there is no such thing as a soul in man distinct from his material organization, and that, at death, there is an utter extinction of being, as well as a dissolution of the body, is no sceptic; because he has formed decided opinions on these points, and is not perplexed with doubts. Is it possible that Bishop Berkeley did not foresee inferences of this kind, and that they were unanswerable? Throughout the whole of his treatise on this subject, I cannot but think that, so far from discovering any of that candour and love of the truth, for its own sake, which

is the genuine spirit of philosophy, I perceive a settled determination to attain celebrity by broaching and maintaining with ingenuity, new and strange opinions, and by varnishing over absurdities with the gloss of sophistry.

“But however absurd this doctrine might appear,” says Dr. Reid, “to the unlearned, who consider the existence of the objects of sense as the most evident of all truths, and what no man in his senses can doubt; the philosophers who had been accustomed to consider ideas as the immediate objects of all thought, had no title to view this doctrine of Berkeley in so unfavourable a light.” In the truth of this opinion, we cannot concur. All the best philosophers had agreed in the belief, although upon different grounds, of the existence of outward objects; and those among the ancients who pretended to doubt their reality, only exposed themselves to ridicule, and their doctrine to contempt. Aristotle, the first among them, was too serious an inquirer into nature, and too profound a thinker to establish any principles, which could lead to such a frivolous and absurd conclusion. In the case of Des Cartes and the Cartesians, perhaps it was naturally to be expected that when they ceased to dogmatise with the schools, and to receive every thing without proof, they should pass into the opposite extreme, and require demonstration for too much, even for those things, which ought to be received upon the authority of nature, without expecting to have them deduced from the principles of philosophy. As Aristotle remarks, there must be some principles taken for granted in every science, otherwise we must suppose the human mind to be capable of an indefinite advancement in its progress towards ascertaining the grounds of knowledge; and surely no part of our knowledge appears to have a more just title to be received upon trust, than that which flows to us through the channels of sense. Des Cartes, however, chose to simplify his philosophy still more, and commencing with the single assumption, *cogito, ergo sum*, upon this as a foundation to

erect the superstructure of his system. In doing this, although by a process so simple, he relieved himself at once from the dogmas of the schools; he pushed his principles to excess, as there are many other propositions whose truth as irresistibly flashes upon the mind, and of which no good proof can be given by reason as this celebrated maxim. It is to be expected, therefore, as we really find to be the case, that every argument he has given in demonstration of the existence of an external world, only tends to prove that we should repose confidence in the testimony of the senses. In the beginning of his second part of the *Principia Philosophiæ*, he thus expresses himself. *Etsi nemo non sibi satis persuadeat res materiales existere, quia tamen hoc a nobis paulo ante in dubium revocatum est, et inter primæ nostræ ætatis præjudicia numeratum, nunc opus est, ut rationes investigemus, per quas id certo cognoscatur. Nempe quicquid sentimus, proculdubio nobis advenit a re aliqua, quæ a mente nostra diversa est. Neque enim est in nostra potestate efficere, ut unum potius quam aliud sentiamus; sed hoc a re illa quæ sensus nostros afficit, planè pendet. Quæri quidem potest an res illa sit Deus, an quid a Deo diversum? Sed quia sentimus, sive potius a sensu impulsus clarè et distinctè percipimus materiam quandam extensam in longum, latum et profundum, cujus variæ partes variis figuris præditæ sunt, ac variis motibus cientur; ac etiam efficiunt ut varios sensus habeamus colorum, odorum, doloris, &c. Si Deus immediatè per se ipsum istius materiæ extensæ ideam menti nostræ exhiberet, vel tantum si efficeret, ut exhiberetur a re aliqua, in qua nihil esset extensionis, nec figuræ, nec motus; nulla ratio potest excogitari cur non deceptor esset putandus. Ipsam enim clarè intelligimus tanquam rem a Deo, et a nobis sive a mente nostra planè diversam; ac etiam clarè viderè nobis videmur, ejus ideam a rebus extra nos positis, quibus omnino similis est, advenire; Dei autem naturæ plane repugnare ut sit deceptor, jam ante est animadversum. Atque*

ideo hic omnino concludendum est, rem quandam extensam, in longum, latum et profundum, omnesque illas proprietates quas rei extensæ convenire clare percipimus habentem, existere. Estque hæc res extensa, quam corpus sive materiam appellamus. I have introduced this paragraph with a double view. In the first place, it explains to us in what Des Cartes supposed the difficulty about our proof of an exterior world to consist; and in the next place, what he imagined would remove that difficulty. As to the first it is evident, instead of the difficulty in the proof of an exterior world consisting, as Dr. Reid maintains, in our perceiving only the idea or image of the outward object, and having no reason from thence to infer its real existence, that he makes it to consist, in our being unable to infer the existence of any object from our perception of it: for although, says he, it be evident when we perceive any object, that our perception must be occasioned by something distinct from ourselves; yet how do we know whether that be God or a substance, extended in length, breadth and depth, as matter appears to be? The only way in which he thought himself able to remove this difficulty, was by asserting that God could be no deceiver, and that he would not perpetually delude us with unreal visions. It appears, therefore, that Des Cartes, as much disposed as he was, to demand proof of every thing, was no sceptic, and found sufficient reasons for giving credit to the testimony of his senses. He might, of consequence, have justly complained of the perversion of his principles by Berkeley. Mallebranche undoubtedly had less cause of complaint, since he not only rested the belief in an external world, upon insufficient and false grounds, maintaining that we could be assured of it only from revelation; but his chimerical doctrine of seeing all things in God, went directly and unavoidably to its utter exclusion. Whatever, however, might be said by the other philosophers, the injustice and inaccuracy of the observation made of them by Dr. Reid,

that they had no right to complain of the attempt made by Berkeley, when applied to Mr. Locke, are glaringly exhibited. Mr. Locke has not only given the hint to Bishop Berkeley, of the plan which he pursued, but has sketched the character of any one who should attempt to execute it, in colours by no means flattering. In ch. 2, book 4. he says, "There can be nothing more certain than that the idea we receive from an external object, is in our minds. This is intuitive knowledge. But whether there be any thing more than barely that idea in our minds, whether we can thence certainly infer the existence of any thing without us, which corresponds to that idea, is that, whereof some men think there may be a question made; because men may have such ideas in their minds, when no such thing exists, no such object affects their senses. But here, I think we are provided with an evidence, that puts us past doubting. For I ask any one, whether he be not invincibly conscious to himself of a different perception, when he looks on the sun by day, and thinks on it by night; when he actually tastes wormwood or smells a rose, or only thinks on that savour or odour? We as plainly find the difference there is between any idea revived in our minds by our own memory, and actually coming into our minds by our senses, as we do between any two distinct ideas. If any one say, a dream may do the same thing, and all these ideas may be produced in us, without any external objects, he may please to dream that I make him this answer. 1st. That it is no great matter, whether I remove his scruple or no. Where all is but dream, reasoning and arguments are of no use; truth and knowledge nothing. 2d. That I believe he will allow a very manifest difference between dreaming of being in the fire, and being actually in it." Again in the same book, ch. 11. "For I think nobody can in earnest be so sceptical, as to be uncertain of the existence of those things which he sees and feels. At least, he that can doubt so far, whatever he may have with his own

thoughts, will never have any controversy with me, since he can never be sure that I say anything contrary to his opinion." We see, therefore, that Mr. Locke pointed out to Berkeley, what might be attempted on this subject; but at the same time certainly gave him no great encouragement to the undertaking, by telling him in very unambiguous terms, that he should consider the person who engaged in it as insane.*

There is a point in this statement of Mr. Locke, as well as in that of Des Cartes before quoted, which is worthy of particular remark, as it relates to the very hinge upon which the controversy with the immaterialists turns. Dr Reid asserts, that since all the philosophers admitted that our ideas of outward objects are the images or representatives of them, and which are the only immediate objects of perception, Berkeley had good ground to infer, since the image alone is perceived, that alone has a real existence. This he considers as an unavoidable inference from the acknowledged principles of the ideal philosophy. Now a moment's examination of what Locke and Des Cartes have just alleged on this subject will convince any one, that these two authors did not consider this as the great difficulty. The ground of Berkeley's scepticism lies much deeper than that which is assigned to it by Dr. Reid. If the doctrine were held, that our ideas are images in the mind, the only immediate objects of perception, it is true that men might say there is no necessity for the existence of the objects, since God by certain laws might produce them in our mind; but the difficulty

* The Count de Buffon very well expresses the difficulty in his *Natural History*, where speaking of man, he says—"As the mind, during sleep, is affected with sensations which are often different from those excited by the actual presence of the objects, is it not natural to think, that the presence of objects is not necessary to the existence of our sensations; and consequently, that both mind and body may exist independent of these objects?" This is the whole difficulty, and as the Count had no hypothesis to serve, he has stated it naturally and truly.

is not removed or lessened by rejecting the doctrine of images. The phenomenon of perception remains still to be explained; and whatever theory be adopted in explaining it, it may always be maintained by those who are determined to be scepticks, that all our perceptions and thoughts about outward objects might be occasioned by certain laws established by the Creator, without admitting the existence of a single object in nature. The very substance and pith of the argument of Berkeley and Hume, as far as any thing like argument is interspersed with that tissue of sophistry, by which they have endeavoured to trifle with the understandings of their readers, is this. It is admitted, that our perceptions of outward objects are occasioned by some action of the several media of bodies upon the several organs of sensation. Now there is no necessary connection in reason and nature between those perceptions, and the existence of those objects; as we know it not unfrequently happens, that objects appear to be present to the senses when disordered, when we know they are not. You have no good reason to conclude from the existence of the perceptions in the mind, that any such objects as seem to be presented to it, really and truly exist. This will be found to have been the difficulty which presented itself to Des Cartes, and Locke, and it is a difficulty which the system of Dr. Reid has no more tendency to remove than that which had been maintained by his predecessors. Of these things, however, we shall treat more fully in their proper place.

It is curious to see Bishop Berkeley on the one hand, enumerating the many advantages, which would result to science and religion, from the exclusion of matter; and Dr. Priestley on the other, descanting upon those which would result from the exclusion of mind. By the one we are told, that by denying the existence of a material world, we remove the corner stone of modern scepticism, and banish many useless and impious speculations in philosophy; such

as whether corporeal substances can think, whether matter be infinitely divisible, how it operates on spirit, how matter could be produced out of nothing, how the same body could rise in a future state, &c.; the latter, thinks that a great advantage attending the system of materialism, is, that we hereby get rid of a great number of difficulties, which exceedingly clog and embarrass the opposite system; such, for instance, as these, what becomes of the soul during sleep, in a swoon, when the body is seemingly dead, (as by drowning or other accidents,) and especially after death; also, what was the condition of it, before it became united to the body, and at what time did that union take place, &c." *Mediotutissimus ibis.* If this be an argument in favour of either system, Mr. Hume's should be preferred to both; since at a single blow he annihilates both matter and mind, and leaves nothing in the universe, about which philosophers can contend.

Dr. Reid informs us, that he was once a disciple of Berkeley, and firmly believed that there was no external world; and we can readily believe him in this particular, because we think we can discover, that in spite of his efforts to release himself from it, his fondness for his first system of philosophy still adheres to him, as may be discovered in the account which he gives of cause and effect, in which matter is entirely excluded, and in the effort which he makes in the following part of his work, to enlist Mr. Locke in the number of those, who would willingly have embraced that doctrine. "There is, indeed, a single passage in Mr. Locke's essay, which may lead one to conjecture, that he had a glimpse of that system, which Berkeley afterwards advanced." After the full statement of that doctrine given by Mr. Locke, in the passages we have extracted from him, could we imagine that Dr. Reid had carefully read his treatise, when he talks of a single passage, in which he seems to have had a glimpse only of Berkeley's system? This is to us very

extraordinary. He proceeds—"The passage is in book 4, chap. 10—where having proved the existence of an intelligent mind, he comes to answer those, who conceive that matter also must be eternal; because we cannot conceive how it could be made out of nothing." And having observed, that the creation of minds requires no less power than the creation of matter, he adds what follows. "Nay, possibly, if we could emancipate ourselves from vulgar notions, and raise our thoughts, as far as they would reach, to a closer contemplation of things, we might be able to aim at some dim and seeming conception, how matter might at first be made, and begin to exist by the power of that eternal first Being; but to give beginning and being to a spirit, would be found a more inconceivable effect of omnipotent power. But this being what would perhaps lead us too far from the notions, on which the philosophy now in the world is built, it would not be pardonable to deviate so far from them, or to inquire, so far as grammar itself would authorise, if the common settled opinion opposes it; especially in this place, where the received doctrine serves well enough to our present purpose." So, then, according to Dr. Reid, the highest conception concerning the formation of matter out of nothing, to which Mr. Locke could attain by the sublimest flights of philosophy, was to discover that it was not created at all. This might be called an Irish bull in any one who was not a philosopher. The hermit of Prague, alluded to by Bishop Warburton, is said after much toil of the brain, to have discovered by mere dint of human penetration, without any kind of aid from supernatural illumination, that whatever is, is; but Dr. Reid would have Mr. Locke greatly outstrip this celebrated ecclesiastic in his discoveries, as he has found, it is presumed without any extraordinary lights also, that that which was created, was not created at all.* Let it not be

* Says Teague to Patrick O'Flanagan, by St. Patrick, but I've found out by hard study and turmoil of the brain, how matter might originally

neglected also to be remarked, that this scheme, which Mr. Locke is here said to represent as the highest attainment of philosophy, is one of which in other parts of his works, he speaks in terms of the greatest disparagement and contempt.*

I shall now proceed to give as succinct and accurate an account as possible, of the argument of the Bishop in favour of his system. He begins thus—"It is evident to any

have been formed, and that is more than you can boast of, honey. "And how is that, my dear," replied Patrick; "why by my shoul," said Teague, "and it is a great secret, but to you I may reveal it; why, and to be sure, it was not created at all."

* Philosophers are much too apt to undervalue the works of each other, and to misconceive the views of one another, for the want of that close attention of mind, necessary to enter fully into them. How, except from this circumstance, shall we account for the following observations of Dr. Clarke, concerning Mr. Locke's opinion upon the same point. In his answer to the first letter of Leibnitz, he says, "that Mr. Locke doubted whether the soul was immaterial or no, may justly be suspected from some parts of his writings. But herein he has been followed only by some materialists, who appear to approve little or nothing in Mr. Locke's writings, but his errors." We here find Dr. Reid suggesting, that in this part of his works, Mr. Locke discovers a tendency to the immaterialism of bishop Berkeley. Now it would be strange, indeed, if so clear an understanding as Mr. Locke's, could in the same work have aimed at two directly opposite doctrines. For Dr. Clarke's assertion about the opinion of Mr. Locke, in reference to the immateriality of the soul, there is ground afforded in his answer to the Bishop of Worcester, who objected to that part of his work, in which he maintains, it is not in our power to decide, that it is impossible to omnipotence to make matter think; but for the conjecture of Dr. Reid, there is not the shadow of evidence. Mr. Locke as distinctly maintains the immateriality of the soul and the materiality of body, as it is possible for any writer to do. His works could not be so misunderstood, except by considering them in detached parts, and neglecting to take the whole in connection, by which method of procedure, we may make an author maintain any doctrine which we choose to ascribe to him. Collins formed more just conceptions of this matter, than Dr. Reid, when he reproved his friend Mr. Locke for supposing that we might form even "a dim conception" of the manner, in which matter was created.

one, who takes a survey of the objects of human knowledge, that they are either ideas actually imprinted on the senses, or else such as are perceived by attending to the passions and operations of the mind; or lastly, ideas formed by help of memory and imagination, either compounding, dividing, or barely representing those originally perceived in the aforesaid ways." Thus he commences with a palpable fallacy, that is as much opposed to his own doctrine, as to that of those whom he denominates materialists, for their credulity in believing in the existence of an exterior world. What philosophers ever maintained, that all the objects of human knowledge consist of ideas? If this were true, not only would matter be excluded from the universe, but mind also; and we should be plunged, at once, into the chaos of Mr. Hume's ideas, and from thence by an unavoidable transition into atheism. For if, as the Bishop says, all the objects of our knowledge in reference to an exterior world, consist of ideas imprinted on the senses; or to speak in more clear and intelligible terms, all the objects of an external world consist only of those perceptions conveyed into the mind through the organs of sense, of course, that external world is a phantom. Again, if as he maintains also, all the objects of our knowledge in reference to the internal world, consist of those ideas which are perceived, by attending to the passions and operations of the mind, of consequence, the internal world or mind, as far as substance or any distinct subsistence is concerned, perishes also by just inference, and trains of unsubstantial images or ideas, are all that survive this wreck of nature. Thus the Bishop, in the very commencement of his work, is guilty of the crime of a *petitio principii*, by assuming the proposition as true, which it is the object of all his treatise to prove; and at the same time states a principle, which would lead to the subversion of his own doctrine. Fortunately, however, for the interests of truth and mankind, there is no justness or force in his maxim; and

fortunately for the philosophers who had preceded him, not one of them had justified him in taking such a proposition for granted. The doctrine of philosophers would have held him out in asserting, that all human knowledge, (not the objects of human knowledge,) consists of the ideas conveyed into the mind through the senses, or those which we derive from reflecting on the operations of our minds; or lastly, those which are formed by the various combinations of these, either as they are found united in nature, or as they are put together by the mind exercising its several powers, as of composition, abstraction, comparison, &c. This is a plain, unvarnished statement of the matter; but would not have suited the purpose of an author, who chooses to show his intellectual skill and address, by involving his readers in a cloud at the outset, in order that while they are groping their way in the dark, he may unwarily conduct them to the point at which he is aiming. The Bishop proceeds—"By sight, I have the ideas of light and colours, with their several degrees and variations; by touch, I perceive, for example, hard and soft, heat and cold, motion and resistance, and of all these more or less, either as to quantity and degree. Smelling furnishes me with odours, the palate with tastes, and hearing conveys sounds to the mind, in all their variety of tone and composition. And as several of these are observed to accompany each other, they come to be marked by one name, and to be reputed as one thing. Thus for example, a certain colour, taste, smell, figure, and consistence, having been observed to go together, are accounted one distinct thing, signified by the name apple. Other collections of ideas constitute a stone, a book, and the like sensible things." Could he imagine that any one would be so undiscerning, as not to see through so thin a web of fallacy as this? Our complex idea of a stone, an apple, a book, or any other sensible thing, constitutes that stone, apple, book, &c! This is the very thing which it is his business to prove,

and yet he commencés with it as triumphantly, as if it had been universally admitted. We denote by words, indeed, our complex ideas of things, but what has that process to do with the proof of their existence? Must they not exist before we have our perceptions of their qualities? And yet Berkeley, according to Dr. Reid, proceeds upon principles recognised and admitted in the philosophy of Locke!

The Bishop continues—"The table I write on, I say exists, that is I see and feel it; and if I were out of my study, I should say it existed, meaning thereby that if I was in my study, I might perceive it, or some other spirit actually does perceive it. There was an odour, that is, it was smelled; there was a sound, that is, it was heard; a colour and figure, and it was perceived by sight and touch. This is all that I can understand by these and the like expressions. For as to what is said of the absolute existence of unthinking things without any relation to their being perceived, that seems perfectly unintelligible. Their *esse* is *percipi*, nor is it possible they should have any existence out of the mind or thinking things, that perceive them." Almost every person who reads this passage, and has the slightest knowledge of metaphysics, will think, that the Bishop's perceptions must either have been very dull, or very peculiar on this subject, or he could not have failed to discern a wide difference between the *esse*, and the *percipi* in these cases. The table on which I write exists, that is, I perceive it. No one whose mind is not sophisticated by subtilty, could be misled by a fallacy so glaring. Who does not see that the object that exists is one thing, and our perceptions of its properties another? In almost half that the Bishop wrote on these points, the sophistry will be perceptible to any one, who only carries along with him the distinction made by Mr. Locke between the secondary and primary qualities of body; the first of which are admitted to be merely sensations in our minds,

while the latter exist in the bodies themselves, whether perceived by us or not. For instance, colour, taste, odours, sounds, heat, cold, are merely perceptions in our minds, and exist in bodies only, as Aristotle says in their causes, or as Mr. Locke maintains, are only powers in the bodies to produce those sensations in us. Take a single example by way of illustration. We approach the fire, and the sensation of heat is felt. Now no one will assert, that the sensation of heat is in the fire; but the power resides in the fire to produce that sensation in us. As language, however, is intended merely for the purposes of ordinary intercourse, and not always constructed with philosophical accuracy, we give the name of heat also to the quality in the fire, and the sensation in us. Hence we say, heat is in fire as well as a sensation in us. The vulgar are right in their acceptance of the term, for when they say that the fire is hot, they mean that it possesses the power of exciting the sensation of heat in us; and when they say that they are themselves hot, they mean that they feel the sensation of heat. The whole mystery might be resolved, and philosophy freed from the charge of having a fondness for paradox, by giving a name at once to the sensation in us, that of heat, and to that quality in fire which excites it, and call it caloric. When we approach the fire, caloric or a quality in that wonderful principle, excites in us the sensation of heat. Thus the darkness and obscurity attempted to be thrown around the subject by Bishop Berkeley, when he maintains, that heat or any of the other secondary qualities of bodies, for the same observation applies to tastes, odours, colours, sounds, are merely perceptions or ideas in us. A large proportion of the fallacies of Bishop Berkeley's treatises, will be detected by keeping this distinction continually in view. Sounds, odours, tastes, we admit exist only in the mind that perceives, but their causes exist in the bodies themselves.

A difficult task, however, still remained to the Bishop, to show that the primary as well as secondary qualities of body, exist only in the mind that perceives them. Let us see with what subtilty he twists and turns this point, in order to make it answer his end. "They who assert," says he, "that figure, motion, and the rest of the primary or original qualities, do exist without the mind, in unthinking substances, do at the same time acknowledge, that colours, sounds, heat, cold, and such like secondary qualities do not; which, they tell us are sensations existing in the mind alone, that depend on and are occasioned by the different size, texture, and motion, of the minute particles of matter. This they take for an undoubted truth, which they can demonstrate beyond all exception. Now if it be certain that these original qualities are inseparably united with the other sensible qualities, and not even in thought capable of being abstracted from them, it plainly follows that they exist only in the mind. But I desire any one to reflect and try, whether he can by any abstraction of thought, conceive the extension and motion of a body, without all other sensible qualities. For my own part, I see evidently that it is not in my power to frame an idea of a body extended and moved, but I must withal, give it some colour or other sensible quality, which is acknowledged to exist only in the mind. In short, extension, figure, and motion, abstracted from all other qualities are inconceivable. Where, therefore, the other sensible qualities are, there must these be also; to wit, in the mind, and no where else." The syllogism contained here, is unworthy of the school-boy in metaphysics; but even with the acutest minds, any thing will pass, when the purpose is served of supporting a favourite theory. There are perceptible in it a triple fallacy. 1st. The sensations of colour, sounds, heat, cold, are confounded again, as usual in this author, with those qualities in bodies which excite them, from which they are entirely distinct. 2dly. These sensa-

tions, it is said, being inseparably connected with the primary qualities of body, as extension, figure, &c. it follows, that the latter must be in the mind, as well as the former. Would it not be as good logic to say, that as the primary qualities, extension, figure, &c. exist out of the mind, and they are always found in connexion with colour, and other sensible qualities, therefore these last must exist out of the mind, and be separate from it? There is no kind of connexion between the premises and conclusion. It would be as pertinent reasoning to allege, that because a man has been wounded by a sword, and can never after see that sword, without associating the idea of his wound with it, and being in some degree pained, since the sensation of pain is in his mind, the sword must be there also.

Thirdly. It is affirmed, that figure, extension, motion; cannot be abstracted by the mind, from other qualities, as heat, cold, colour, &c. which is manifestly false, since nothing is more common than such abstractions. Cannot the mathematician trace the relations of magnitude and figure, in his cubes, cones, and pyramids, without thinking of their colour, sound, taste, or odours?

Again the Bishop says, "great and small, swift and slow, are allowed to exist no where without the mind, being entirely relative, and changing as the frame or positions of the organs of sense varies. The extension, therefore, which exists without the mind, is neither great nor small, the motion neither swift nor slow, that is, they are nothing at all." That is to say the College of Pennsylvania, at which I now look, changes its apparent magnitude according to the distance and position of my eye, is not great when compared to the earth or sun, nor small, when compared to the houses around it; therefore, it is nothing, having no extension. Such are the reasonings which have been represented as legitimate deductions from the sound and just philoso-

phy of the inimitable Locke! When will philosophy cease to disgrace herself by follies and absurdities?

But to proceed with the Bishop. "It is indeed," says he, "an opinion strangely prevalent amongst men, that houses, mountains, rivers, and in a word, all sensible objects have an existence, natural or real, distinct from their being perceived by the understanding." (And who will not join the Prelate in expressing his astonishment at the ignorance, and credulity of mankind in forming such an opinion?) "But with how great an assurance and acquiescence soever this principle may be entertained in the world; yet whoever shall find in his heart, to call it in question may, if I mistake not, perceive it to involve a manifest contradiction. For what are the forementioned objects but the things we perceive by sense, and what do we perceive besides our own ideas or sensations?" That is to say, by the eye we see or perceive not magnitude and figure; but those perceptions or ideas which the mind has of them, by the ear, not those undulations of the air, which occasion sound, but our sensations of sound, and the like of the other senses. Is not such an attempt to confuse the science of mind worthy of the highest reprobation? But the Bishop continues in the same strain. "Some truths there are so near, and obvious to the mind, that a man need only open his eyes to see them. Such I take this important one to be, to wit, that all the quire of heaven, and furniture of the earth, in a word all those bodies which compose the mighty frame of the world, have not any subsistence without a mind, and that their being is to be perceived or known." This, if established would certainly be a much greater discovery than any that Newton could boast of. We have only to open our eyes to perceive that there is no sun, moon, stars, or earth. Those must be singular opticks that, instead of presenting objects to our view, annihilates them, and ought to be denominated in-

struments of vision reversed, or the power of seeing backward.

He proceeds. "But say you, the ideas themselves do not exist without the mind; yet there may be things like them whereof they are copies or resemblances, which things exist without the mind in an unthinking substance. I answer, an idea can be like nothing but an idea; a colour, or figure, can be like nothing but another colour or figure. If we look but ever so little into our thoughts, we shall find it impossible for us to conceive a likeness except only between our ideas." And yet Dr. Reid represents all the philosophers as maintaining, that ideas are the images or representatives of outward objects; and Berkeley as justly inferring from thence the non-existence of an exterior world. Berkeley with more acuteness perceived that this doctrine would operate against his system; for if there were the images of outward objects in the mind, there would be strong presumption, that where there was image there must be the real being; where there was a shadow, there must be a substance; and where there was a representative, there must be a constituent.

But that I may not expend time uselessly in exhibiting these intellectual fooleries, this egregious trifling with our understandings, I shall hasten to the only part in which the semblance of an argument appears, and we shall see that this was the same argument used by Mr. Hume, and which had presented itself as a difficulty to Des Cartes, Locke, and all the philosophers. I shall state it at full length and in all its force, and the refutation of it shall close our strictures upon the Bishop's performances. It is found in his treatise upon the Principles of Human Knowledge, sect. 18, part 1st. "But though it were possible that solid, figured, moveable substances may exist without the mind, corresponding to the ideas we have of bodies, yet, how is it possible for us to know this? Either we must know it by sense

or by reason. As for our senses, by them we have the knowledge only of our sensations, ideas, or those things which are immediately perceived by sense, call them what you will. But they do not inform us that things exist without the mind; or unperceived, like to those that are perceived. This the materialists themselves acknowledge. It remains, therefore, that if we have any knowledge at all of external things, it must be by reason, inferring their existence from what is immediately perceived by sense. But what reason can induce us to believe the existence of bodies without the mind, from what we perceive; since the very patrons of matter themselves, do not pretend there is any necessary connection between them, and our ideas? I say, it is granted on all hands, (and what happens in dreams, phrensies and the like, puts it beyond dispute,) that it is possible we might be affected with all the ideas we have now, though no bodies existed without resembling them. Hence it is evident, the supposition of external bodies is not necessary for the producing our ideas; since it is granted they are produced, sometimes, and might possibly be produced always in the same order we see them in at present, without their own concurrence."

We see the same argument exhibited by Mr. Hume, with some difference only in the phraseology, in the *Treatise of Human Nature*, part 4. sect. 2nd. "That our senses offer not their impressions as the images of something distinct, or independent and external, is evident; because they convey to us nothing but a single perception, and never give us the least intimation of any thing beyond. A single perception can never produce the idea of a double existence, but by some inference of the reason or imagination. When the mind looks further than what immediately appears to it, its conclusions can never be put to the account of the senses; and it certainly looks farther, when from a single perception it

infers a double existence, and supposes the relation of resemblance, and causation between them." As this argument is not without some show of reason, we shall distinctly state it, and then furnish our answer to it. It consists in this, which is the ground-work of the system of immaterialism. It is admitted by all the philosophers, that all our perceptions of outward objects are produced in the mind by some action in the organs of sense, and that those perceptions, by the appointment of the Creator, are annexed to such action. Now, upon what ground can we infer the existence of such objects, from the mere circumstance that we have perceptions of them? Is it from sense that we arrive at this conclusion? But by sense, it is evident, all that we can obtain is, our perceptions of those things we call the objects of sense. Sense alone can give us no knowledge of their existence, since all that it can communicate to the mind are our sensations; and it is certain if that action could be produced in the organ, without the existence of objects, the perceptions would still be excited. Is it from reason that we would infer the existence of objects, grounding its conclusions upon our perception of their qualities? But it is clear also, that reason cannot deduce such an inference; since we know that there is no necessary connection between our perceptions, and the existence of objects, as appears in the case of dreams, phrensies, and disorders of the mind, in which things appear to be present, that we are sure have no real being. This is the argument, and it is not without plausibility. It was this view of the subject that led Des Cartes to declare, that he reposed confidence in the perceptions of sense, because God could be no deceiver, and would not delude him by false shows and apparitions. The answer, however, to an objection of this kind is sufficiently evident, upon the principles of a sound philosophy. The testimony of our senses, to use the language of Mr. Locke, is the true, and sole evidence in the case, and should be

deemed satisfactory. Reason may furnish arguments why we should repose confidence in the report which they make, but can never give confirmation to the intelligence they communicate. They are the proper and sole judges in the case. The same holds here as in the instance of memory, and intuitive certainty in matters of demonstration.

We can give no reason why we place confidence in the evidence of our memories, or why we believe in the certainty of intuitive truths; but that such are the laws of our constitution; and if any one should deny that we can ever safely trust our memories, or that we can ever be perfectly certain that twice two are four, and that things equal to the same thing are equal to one another, all that we could answer, would be as Mr. Locke does, in the case of the testimony of the senses, we think him unworthy to be reasoned with. Some of the ancient sceptics we know carried matters to this extremity, denying that there was any such thing as truth, or if there were, that it was discoverable by the human mind, and therefore, made it their boast to remain in a state of entire indifference and suspense of mind. Such scepticism, if we could suppose it to be genuine and sincere, would border upon insanity, and if affected, is an object of pity and contempt.

CHAPTER VI.

Mr. Hume's Principles.

FROM Berkeley let us proceed very briefly to advert to the principles of Mr. Hume. Nothing can be more certain, than that the system of the former leads by unavoidable consequence to that of the latter. It may be remarked also, that the Bishop has not taken any pains, or discovered any solicitude to fortify his theory against invasions from this quarter. If by our senses we cannot attain to a knowledge of the existence of material substances without, by our consciousness, we can, with no greater degree of certainty, ascertain the existence of an immaterial principle within. If the whole outward world consists of a mere train of perceptions and ideas, surely there is good reason to infer, that the whole of the inward world consists of another train of perceptions and ideas. The whole universe, therefore, upon the principles of this sublime philosophy, is resolved into a succession of fleeting ideas, following each other according to certain laws of association. The metaphysicians of the Scottish school, and particularly Reid and Stewart, are lavish of their encomiums upon Mr. Hume; and undoubtedly, as an elegant historian, too much praise cannot be bestowed upon him. His history, as a production of genius, stands unrivalled, except by Thucydides and Livy; and I think, taking it altogether, considering it in reference to the simplicity and beauty of the composition, the lively and agreeable narration which it contains of matters of fact, the masterly delineation

tion of characters, and the mass of important and useful information he has included in it, it is to be preferred to all others. But as a metaphysician, I utterly deny his claims, either to a just comprehension of his subject, or to propriety and perspicuity in his modes of expression. He had read on this subject, as he had on those connected with religion, without having studied and understood them. Let me, however, in order to justify my strictures give a brief sketch of his opinions, in his own language.

He divides all our perceptions into impressions and ideas, without any license from the received philosophy of his time, or any ground in nature for such a distinction, and yet he gives us no reason for it. The difference betwixt impressions and ideas, consists in the degrees of force and liveliness, with which they strike upon the mind, and make their way into our thought or consciousness. Those perceptions which enter with the most force and violence, we may name impressions, and under this head he comprehends all our sensations, passions and emotions, as they make their first appearance in the soul.

By ideas, he means the faint images of these in thinking and reasoning. All our simple ideas are in their first appearance derived from simple impressions, which are correspondent to them, and which they exactly represent. He finds by experience that the simple impressions, always take the precedence of the correspondent ideas, but never appear in the contrary order. This appears both from the order of their appearance, and from the phenomenon, that wherever by accident the faculties which give rise to any impressions are obstructed in their operations, as when one is born blind or deaf, not only the impressions are lost, but their correspondent ideas." Again he proceeds—" Impressions may be divided into two kinds, those of sensation and those of reflection. The first kind arises in the soul, originally from unknown causes. The second is derived in a great measure

from our ideas, and that in the following order. An impression first strikes upon the senses, and makes us perceive heat or cold, thirst or hunger, pleasure or pain of some kind or other. Of this impression there is a copy taken by the mind, which remains after the impression ceases, and this we call an idea. This idea of pleasure or pain, when it returns upon the soul, produces the new impressions of desire and aversion, hope and fear, which may properly be called impressions of reflection, because derived from it. These again are copied by the memory and imagination, and become ideas; which perhaps in their turn give rise to impressions and ideas." Thus is laid the foundation of a theory, which has received such frequent and honourable mention, in the works of most metaphysicians of the Scottish school. First, impressions beget ideas, their images or copies, and distinguished from them only by having a less degree of force and vivacity; then these ideas again beget other impressions, having a greater degree of force and vivacity than themselves; then again, to carry on the work of procreation in regular line, these new impressions beget new ideas, and so on. We have heard a great deal of the jargon and intellectual fooleries of the schoolmen, and Mr. Hume is as ready as any one to join in the cry against them; but we defy any one to produce from their voluminous works, any specimen of a more complete Babylonish dialect, than that which we have presented from the *Treatise of Human Nature*. For our part, we must confess, that we are utterly at a loss to account for the repeated panegyrics bestowed by Dr. Reid and others upon this author, as when he is called the acute metaphysician, one of the acutest metaphysicians that ever lived, and his works and opinions are made to occupy as large a share of attention, and considered as entitled to the same respect as those of Locke, Aristotle, Des Cartes, and Mallebranche. We think that all that he has written on these subjects, have detracted from his reputation, instead of making any addi-

tions to his, in other respects, well deserved fame. He had read Mr. Locke, Berkeley and others, with just sufficient care, to obtain crude and indigested ideas of the subjects treated of by them, but he evidently discovers that he never understood them; and with the crude materials thus collected by a cursory perusal, he has attempted to rear a ridiculous superstructure of scepticism and foolery. In order to justify animadversions that may appear to be severe, let me briefly state some of the points attempted to be maintained in the *Treatise of Human Nature*, and the language in which they are conveyed. I would premise, however, this statement of his doctrine with this single observation, that it will readily be perceived, if the account before mentioned be regarded as a true one, then his sceptical inferences are irresistible. For if our original impressions are derived from unknown causes, and these impressions beget ideas their copies, these copies of external impressions, again produce impressions of reflection, and these again ideas of reflection; it is clear that all the objects of human perception and knowledge are resolved at once into fleeting trains of ideas, and there is no necessity for supposing the existence of a material or immaterial principle in man.

To proceed with our proposed statement of his opinions. Mr. Hume maintains, that we have no idea of substance, space, time, extension, or of a mathematical point, and no abstract ideas. He says, a straight line is not well defined to be the shortest distance between two points, and thinks that more than one right line, may be drawn between two points; as for instance, supposing two lines to approach at the rate of an inch in twenty leagues, he perceives no absurdity in asserting, that upon their contact they become one. He asserts, that we are incapable in geometry, of telling when two figures are equal, when a line is a right one, and when a surface is a plain one. He maintains, that it is impossible for us to form any idea of any thing specifically different

from ideas and impressions; that all our arguments concerning causes and effects, consist both of an impression of the memory or senses, and of the idea of that existence, which produces the object of the impression, or is produced by it. "He asserts, that it is impossible to distinguish the memory and imagination; that the belief or assent which always attends the memory and senses, is nothing but the vivacity of those perceptions they present; that the necessity which makes two times two equal to four, or the three angles of a triangle equal to two right ones, lies only in the act of the understanding, by which we compare these ideas; and that in like manner, the necessity or power which unites causes and effects, lies in the determination of the mind to pass from the one to the other. Mr. Hume maintains, that any thing may produce any thing, creation, annihilation, motion, reason, volition, &c. defines reason to be nothing but a wonderful and unintelligible instinct in our souls, which carries us along a certain train of ideas, and endows them with particular qualities, according to their particular situations and relations. He asserts, that all our reasonings concerning causes and effects, are derived from nothing but custom; and belief is more properly an act of the sensitive, than of the cogitative part of our nature. Finally, to hasten to the conclusion of this list of absurdities, he asserts, that the doctrine of the immateriality, simplicity, and indivisibility of a thinking substance is true atheism, and will serve to justify all the sentiments, for which Spinoza is so universally infamous; that we have no idea of self or personal identity; that the true idea of the human mind, is to consider it as a system of different perceptions or different existences, which are linked together by the relation of cause and effect, and mutually produce, destroy, influence, and modify each other; that identity depends on the relations of ideas; and these relations produce identity, by means of that easy transition they occasion; and lastly, he defines belief to be a

lively idea associated to a present impression." Was ever such a chaos of absurdity, such a despicable jargon attempted to be imposed upon the world, under the respectable name of philosophy! And this too in a writer, who in his metaphysical disquisitions had promised the literary world, "to throw some light upon subjects, from which uncertainty had hitherto deterred the wise, and obscurity the ignorant," to unite the boundaries of the different species of philosophy, by reconciling profound inquiry with clearness, and truth with novelty, and "to banish all that jargon, which has so long taken possession of metaphysical reasonings, and drawn such disgrace upon them." He says himself, of the *Treatise of Human Nature*, that it fell still-born from the press, and was not called into life, until buoyed up into notice, by his next publication, its more fortunate brother; and it would have been better for it, if it had been allowed by the literary world, to make its peaceful exit unnoticed and unknown, than to have been ushered into light, only to drag out a miserable existence, with a distempered constitution and a crazy brain; and at the same time uttering a language blasphemous and confused, to expose it to the contempt and enmity of both God and man. Happy would it be for this author, if those portions of his works which relate to metaphysics, to morals and religion, could be erased. His reputation would then be untarnished, and his name descend to future ages, with unsullied and continually increasing honours.

I shall conclude my account of perception, with the system of Dr. Reid. As this writer has taken such liberty with the doctrines of the philosophers who preceded him, we are prepared to anticipate from his researches, some great improvement and some extraordinary discovery. Let us put this matter to a fair test, and see what merit he is entitled to, on so interesting a branch of metaphysical science. We have seen that the charge is unfounded, which he alleged

against the philosophers of maintaining that in perception, besides the object perceived, the mind that perceives, and the perception of the mind, there is a fourth thing called an idea, image or representative, and which alone is perceived by the mind. Having freed the philosophers from this accusation, of consequence, the merit to which he lays claim of having detected their error, and brought mankind back from the illusions of hypothesis to nature and common sense, is not justly his due. Let us now examine the doctrine, which he himself has broached and endeavoured to establish. I am happy, however, now to have it in my power to bestow another degree of praise upon so learned and respectable a writer. If I cannot allow him the merit of originality on this subject, inasmuch as I am entirely satisfied, that when he supposes himself combatting the principles of Mr. Locke, he is, in truth supporting his doctrines, and where he departs from his track, he wanders into the paths of error; I do not hesitate to admit, that he has contributed to throw no inconsiderable light upon the subject of perception, as well as other points of metaphysical science. No one could be certain, that he would have been able so clearly to understand these matters, or even the doctrines of Mr. Locke, unless he had enjoyed the advantage of Dr. Reid's treatises. We have seen, that the doctrine of Mr. Locke is, that when any object is presented to us, through the instrumentality of the organs of sense, and the action of bodies upon them by means of their several mediums, we have sensations or perceptions of their qualities, and at the same time a conviction founded on what he calls the testimony of the senses, of the existence of those objects. Let us see the opinion of Dr. Reid on this point, and in what respect he has attempted to improve upon the system of Locke. "When I smell a rose," says he, "there is in this operation both sensation and perception. The agreeable odour I feel, considered by itself, without relation to any ex-

ternal object, is merely a sensation. It affects the mind in a certain way; and this affection of the mind may be conceived without a thought of the rose or any other object. This sensation can be nothing else than it is felt to be. Its very essence consists in being felt; and when it is not felt, it is not. There is no difference between the sensation, and the feeling of it, they are one and the same thing. It is for this reason that we before observed, that, in sensation, there is no object distinct from that act of the mind by which it is felt; and this holds true with regard to all sensations.

Let us next attend to the perception which we have in smelling a rose. Perception has always an external object, and the object of my perception in this case, is that quality in the rose which I discern by the sense of smell. Observing that the agreeable sensation is raised when the rose is near, and ceases when it is removed, I am led by my nature to conclude some quality to be in the rose, which is the cause of this sensation. This quality in the rose is the object perceived; and that act of the mind, by which I have the conviction and belief of this quality is what, in this case, I call perception." In the distinction here made between sensation and perception, and in analyzing that complex operation of the mind, which takes place in our converse with the external world, consists what may be considered as the discovery of Dr. Reid, upon which he evidently builds no small claims to merit, and which we see his follower Professor Stewart, speaking of in terms of high panegyric. Dr. Reid himself, speaking on this subject, says—"I shall conclude this chapter by observing, that as the confounding our sensations with that perception of external objects, which is constantly conjoined with them, has been the occasion of most of the errors and false theories of philosophers, with regard to the senses; so the distinguishing these operations seems to me to be the key, that leads to a right understanding of both." He is so fond of this distinction, that he fre-

quently recurs to it. "Sensation," says he, "taken by itself, implies neither the conception nor belief of any external object. It supposes a sentient being, and a certain manner in which that being is affected, but it supposes no more. Perception implies an immediate conviction and belief of something external; something different both from the mind that perceives, and from the act of perception. Things so different in their nature, ought to be distinguished; but by our constitution they are always united. Every different perception is conjoined with a sensation that is proper to it. The one is the sign, the other the thing signified. They coalesce in our imagination. They are signified by one name, and are considered as one simple operation. The purposes of life do not require them to be distinguished. It is the philosopher alone who has occasion to distinguish them, when he would analyze the operation compounded of them. But he has no suspicion that there is any composition in it; and to discover this requires a degree of reflection, which has been too little practised even by philosophers."

After broaching this theory, which was undoubtedly before unknown to the schools, how could Mr. Stewart speak in the following terms of Dr. Reid's doctrine about perception? It would really appear, as if he had not sufficiently studied the works of his master to understand them. "But although Dr. Reid has been at much pains to overturn the old ideal system, he has not ventured to substitute any hypothesis of his own in its place. And, indeed, he was too well acquainted with the limits prescribed to our philosophical inquiries, to think of indulging his curiosity in such unprofitable speculations. All, therefore, that he is to be understood as aiming at, in his inquiries concerning our perceptive powers, is to give a precise state of the fact, divested of all theoretical expressions, in order to prevent philosophers from imposing on themselves any longer, by words without meaning, and to extort from them an acknowledg-

ment, that with respect to the process of nature in perception, they are no less ignorant than the vulgar." With regard to the encomium bestowed by the professor upon his friend, in the last part of this paragraph, we have only to remark, that if it be considered as exclusive and peculiar, it is altogether unmerited, for we trust it will appear from what we have before stated, that no man better understood the limits of human knowledge, and more strictly confined himself within them in all his investigations, than Mr. Locke, or appears less inclined to indulge his curiosity in unprofitable speculations; and moreover, no one in "his inquiries concerning our perceptive powers, has more closely confined himself to a precise state of the fact, and more explicitly avows his ignorance of the manner of perception, or to use the splendid diction of the Professor, of the process of nature in perception." In reference to the assertion in the first part of the paragraph, that although Dr. Reid has been at great pains to overturn the old ideal system, he has not ventured to substitute any hypothesis of his own in its place, it is totally unfounded. He has given his solution of the phenomenon of perception, or that operation of the mind, by which we become acquainted with the existence and qualities of outward objects, as distinctly as Mr. Locke, or any other writer. Mr. Locke, for instance, maintains that in smelling a rose, we have a sensation or perception, (for he considers the terms in this case synonymous,) of an agreeable odour, and at the same time an immediate conviction, arising out of the testimony of the senses, of the existence of some object in nature, which causes that perception. Dr. Reid informs us, that in smelling a rose, we have both a sensation of an agreeable odour and also perception, by which he means an act of the mind different from sensation. This will lead, however, to a statement of his system, in which I think, we shall perceive that as much as he complains of Mr. Locke, and the other philosophers, on account

of their indistinct and ambiguous use of terms, he is by no means free from the charge of a want of perspicuity and precision.

First. We are told in essay 2, ch. 5, of the intellectual system; "If, therefore, we attend to that act of the mind which we call the perception of an external object of sense, we shall find in it these three things. First, some conception or notion of the object perceived; secondly, a strong and irresistible conviction and belief of its present existence; and thirdly, that this conviction and belief are immediate, and not the effect of reasoning.

Secondly. We have seen before in a passage quoted from him, that he says, when I smell a rose there is in this operation, both sensation and perception. The agreeable odour I feel, is a sensation. Let us see now by putting these two passages together, how complex an operation of the mind, is supposed by the Dr. to be produced by merely smelling a rose. When I smell a rose there is in that act of the mind, both sensation and perception; that is according to his own account, there are four distinct acts of the mind in that single operation; first, an agreeable sensation or odour; next, some conception or notion of the object perceived; then, a strong and irresistible conviction and belief of its present existence; and lastly, that this conviction and belief are immediate, and not the effect of reasoning. We can readily admit, that when we come philosophically to analyze the operations of our minds, there is greater complexity in them than the vulgar, who are prone to confound things that are distinct, are apt to imagine; but we cannot think that in the simple act of smelling a rose, there can be so great a variety of perceptions, as is here represented. As to the second act of the mind here supposed to be excited, what other conception or notion can we have of the smell of a rose, but that it is an agreeable odour of a distinct and peculiar kind, which we obtain from sensation? And as to the last act, that

this belief and conviction are immediate and not the effect of reasoning, this so far from entering into our primitive notices of things, is rather an inference deduced by philosophers, from examining the phenomena of the human mind. The lessons of philosophy teach us that before reason can come in to our aid, we have a firm conviction of the existence and order of an exterior world. All the complexity, therefore, which we see any solid ground to admit in that operation of the mind, by which we have our notices of external bodies, is that which is recognized in the system of Mr. Locke; that by sensation or perception, we are rendered sensible of their qualities, and this perception of the quality, is accompanied at the same time, with an irresistible conviction, from the testimony of sense, of its real existence in *rerum natura*. If Dr. Reid had maintained, that in the converse we hold with an exterior world, besides sensation, by which we become acquainted with the qualities of bodies, by perception also, we are informed of their actual existence in *rerum natura*, the distinction would have been intelligible, and have corresponded to what Mr. Locke denominates the testimony of the senses.

But let us examine a little more narrowly the sentiments of the Dr. "When I smell a rose, there is in this operation both sensation and perception. The agreeable odour I feel, considered by itself without relation to an external object, is merely a sensation. Let us next attend to the perception which we have in smelling a rose. Perception has always an external object; and the object of my perception, in this case, is that quality in the rose, which I discern by the sense of smell." Here we see, that it is assumed as a principle without any proof, that while perception has an external object, sensation has none? Is this a self evident truth? When I apply my nostril to a rose, and imbibe an agreeable odour, is not the object of my sensation, in that case, the effluvium emitted from that flower? Could I ever obtain

that sensation unless that quality in the rose, acted upon the olfactory organs? Has not sensation, therefore, in all cases an external object? But it is said, this sensation merely affects the mind in a certain way; and this affection of the mind may be conceived without a thought of the rose or any other object." It is true it may be conceived without a thought of the rose, or any other object, except the effluvia emitted from the rose itself. Originally it is certain, we could have no conception or notion of the odour of a rose, unless we had experienced that sensation; but the rose itself gives us many more perceptions besides that of its agreeable odour. It is true, as the Dr. asserts, that our sensation can be nothing else than it is felt to be, and its very essence consists in being felt, and when it is not felt it is not." But does not the very term sensation imply that something is felt? Now let me ask what it is that is felt? Not the sensation itself surely, for that would be to maintain that we have a sensation of a sensation, and the first sensation would remain to be accounted for. Wherever we have a sensation, the very term implies that there is something felt, or that there is an object of that sensation. Nothing can be more clear than this simple proposition. "Perception, however, we are told, has an external object; and the object of my perception, in this case, is that quality in the rose which I discern by the sense of smell." That is to say by sensation or our sense of smell alone, do we become acquainted with the fact that there is such a quality in the rose, as can excite in us an agreeable odour; and yet by perception alone we become apprised of the existence of that quality. Sensation is here, indeed, made as blind as a bat; while perception is as sharp sighted as an eagle. He proceeds. "This quality in the rose, is the object perceived; and that act of my mind, by which I have the conviction and belief of this quality, is, what in this case, I call perception." But certainly when I smell a rose, the object smelt or which com-

municates a sensation to me, is some quality in it; and the object of my sensation is that quality. It is an acknowledged rule of philosophising that no more causes of things are to be admitted than are both true and sufficient to explain the phenomena. Now by admitting that we have sensations or perceptions of the qualities of objects around us, and that these sensations and perceptions are always accompanied by an immediate and irresistible conviction or belief of the real existence of those objects, all the phenomena are explained without having recourse to a refined and unintelligible distinction between sensation and perception; or multiplying, beyond the necessity of the case, those acts of the mind by which we are made acquainted with an external world.

To make the case more clear by an example. I enter a room in which there is a magnolia, whose odour I have never before smelt. Now certainly all that I can be sensible of in this case is an agreeable odour, attended by an immediate conviction that there is something in the room which causes that sensation. Nothing seems to be more evident, than that the only communication I can hold with that flower, and the only intimation I have of that agreeable odour in it is through the organs of smelling; and to talk of perception, in this instance, as a distinct act of the mind from sensation or smelling, whose object is that quality of the magnolia, while smelling has no object, or in other words we smell nothing, is at once to pervert the meaning of words as well as to misinterpret the voice of nature. I am afraid, therefore, that although the Dr. had promised himself, and the literary world so much advantage from the discovery of these distinct acts of the mind in perception, and thus analyzing its complex operations, when critically examined, it will not bear the test; but will be found to be a distinction without a difference. He seems to have imagined that in discovering this distinction between sensation, and

perception, he had erected an impregnable fortress, at a point too in which there was previously no adequate defence against the scepticism of Berkeley, and Hume; but I apprehend in this expectation he was entirely mistaken. Since all you know about an external world, exclaim, Berkeley and Hume, consists of your sensations, how can you conclude that there is any thing existing distinct from your sensations? We have shown how other philosophers resolved this query. Dr. Reid, would reply; because, besides my sensations of the qualities of bodies, I have distinct perceptions of those qualities, and my perceptions must always have an external object. The reply might be made still by the scepticks, how do you know that there exists in the world any thing more than your perceptions and sensations, admitting that they are distinct acts of the mind? Your perceptions are in the mind, as well as your sensations, and moreover you yourself admit, that it is by means of sensations you arrive at your perceptions of the qualities of bodies. Now, under these circumstances, can you derive from these perceptions any better proof of the existence of external objects than from your sensations? You yourself admit in the case of the rose, "the object of my perception in this case is that quality in the rose, which I discern by the sense of smell." Now can this act of perception, which depends upon sensation for all the information it obtains about the qualities of body, give you a more complete knowledge of the external world, than sensation itself?

It is, I think sufficiently apparent from the foregoing observations, that Dr. Reid has erected no new or more effectual barriers, than had been reared by his predecessors, against the inroads of sophistry, and scepticism. Berkeley, and Hume, if they were now living, might maintain their doctrines with as much plausibility as ever, and find no greater impediments than formerly, in raising their superstructure. The fact is, that a belief in the existence of bodies and their

qualities necessarily accompanies our perceptions, as a belief in things, which we distinctly remember having once existed, accompanies the remembrance of them, or as the belief that a proposition is actually presented to our understandings attends our attempts to comprehend it, or as the belief that the sword which has wounded us exists, from the circumstance of its having inflicted the wound.

CHAPTER VII.

Of the Primary and Secondary qualities of Bodies.

THE primary qualities of body, as enumerated by Mr. Locke, are extension, figure, solidity, motion, rest, hardness, softness, divisibility, fluidity; the secondary, are sound, colour, taste, smell, heat and cold, and such like. The first are called primary, because they inseparably belong to matter in whatever state or condition it be found, and whatever may be the modifications and alterations it may undergo: the second, secondary, because they are in the bodies themselves only the powers to produce certain sensations in us, and these powers appear to be the result of the primary qualities, as the bulk, figure and texture, of the several objects of sense. This distinction between the primary and secondary qualities of body, which seems to have been unnoticed by Aristotle, was first adverted to by Des Cartes, and afterwards more clearly stated by Mr. Locke.

There appears to be a real foundation in nature for this distinction. And what is worthy of remark on this point, is, that in the structure of language, which is not framed generally with a view to philosophical disquisition, but for the purpose of ordinary intercourse; in the case of primary qualities, the names are given to those qualities as they exist in their subject, without any reference to our perceptions; and in the case of the secondary a procedure directly the reverse is to be observed, for here names are assigned to

our sensations, without any reference to the qualities of body, or to the causes of our sensations, as Aristotle would say. Colour, taste, sound, smell, heat, cold are obviously mere sensations in our minds produced by the action of outward objects upon the senses; while extension, figure motion, &c. have no kind of dependance upon our perceptions. The vulgar, however, who do not find it necessary, in the daily transactions of life, nicely to discriminate, soon transfer the names of their perceptions to those powers or qualities in bodies that excite them. Hence heat is said to be in the fire, coldness in ice, sugar is said to be sweet, and wormwood bitter; when it is evident that heat, cold, sweetness, bitterness are not qualities in bodies, but merely sensations in us. The controversy, therefore, between the philosopher and the vulgar, when the one strenuously contends that there is no heat in fire, coldness in snow, sweetness in sugar, or bitterness in wormwood, and the other as strenuously contends that there are, is idle and frivolous, as it turns merely upon the meaning of a word; as for instance, whether the terms heat, cold, sweetness, bitterness, denote our sensations, or the qualities of bodies that occasion them. When the philosopher maintains, that there is no heat in fire, he means that the sensation of heat is not in that element, whichevery one will admit; when the vulgar declare that there is heat in fire, they mean that the quality is in fire which excites heat in us, which is equally indisputable. Thus the whole mystery is solved; the vulgar freed from maintaining an absurdity; and philosophy relieved from the charge of a fondness for paradox, and a disregard to the dictates of common sense.

Such are the doctrines of the schools in regard to the primary and secondary qualities of body. The only slight inaccuracy, to which I before adverted, with which the doctrine of Mr. Locke on this point appears to be justly chargeable, is that of admitting a resemblance between our ideas

and the primary qualities of body; into which error he must have been betrayed, in the first place, from the extreme distinctness of our ideas of the primary qualities compared with the secondary; and in the second place, from an unwillingness to depart too far from the dogmas of the school philosophy, which allowed a similitude in all cases whatever. Amidst the studied efforts of Bishop Berkeley to darken counsel in metaphysical science, and to blind the eyes of his readers, by raising a cloud of refinement and sophistry, he had the merit of detecting this inaccuracy in Mr. Locke, although he endeavours to pervert it to the purpose of scepticism. This observation has been made by Dr. Reid, and had that writer, after stating at full length the precise doctrines of Mr. Locke, been contented with setting him right in this particular, and bestowing the praise of detecting the error upon him who merited it, he would never have met with any remonstrance or animadversion from me relative to this matter. But can the most enlarged charity fail to discern in the following criticisms, a studied and reprehensible attempt to decry the merits and disparage the productions of Mr. Locke? "Let us hear, now," says the Dr. "how Mr. Locke explains the nature of those ideas, when applied to primary and secondary qualities. Book 2, ch. 8, sect. 7. "To discover the nature of our ideas the better, and to discourse of them intelligibly, it will be convenient to distinguish them, as they are ideas or perceptions in our minds, and as they are modifications of matter in the bodies that cause such perceptions in us; that so we may not think, (as perhaps usually is done) that they are exactly the images and resemblances of something inherent in the subject; most of those of sensation being in the mind no more the likeness of something existing without us, than the names that stand for them, are the likeness of our ideas, which, yet upon hearing they are apt to excite in us." Upon this passage of Mr. Locke, Dr. Reid, makes the following observations. "This way of dis-

tinguishing a thing, first, as what it is, and secondly, as what it is not, is, I apprehend, a very extraordinary way of discovering its nature." Indeed! And pray what other way would the Dr. prescribe of ascertaining the nature of any thing, than that of determining in the first place what it is in itself, and afterwards discriminating it from all other things that bear a resemblance to it? Suppose I wish to ascertain, as far as the human mind is able, the nature of man, must I not ascertain the properties that belong to him, and by comparing him with other animals, determine the distinguishing traits that separate him from them? The Dr. proceeds. "And if ideas are ideas or perceptions in our minds, and at the same time the modifications of matter in the bodies that cause such perception in us, it will be no easy matter to discourse of them intelligibly." How uncandid and illiberal is this stricture! Dr. Reid had before in this same essay been explaining Mr. Locke's doctrine about primary and secondary qualities in bodies. He could not have misconceived the meaning of this metaphysician. He could not have failed to discern that, in this part of his essay, he had reference to that distinction, and intended merely to inform us, that when he spoke of our perceptions of heat, cold, sweet, bitter, sound, taste, &c. as existing in the bodies themselves, he meant merely those qualities in the bodies, which are apt to excite such sensations in us. Is not this very intelligible to one not determined to misconstrue it, although, I will admit not as accurately expressed as it might be? Our ideas or perceptions, can never properly be denominated the modifications of matter in the bodies that cause such perceptions in us; but what has occasional inaccuracy and obscurity in the manner of expression to do with the tenor of a man's doctrine?—In the same strain the Dr. continues his animadversions. The discovery of the nature of our ideas, is carried on in the next section, in a manner no less extraordinary. "Whatsoever the mind perceives in itself, or is the imme-

mediate object of perception, thought, or understanding, that I call idea; and the power to produce any idea in our mind, I call quality of the subject wherein that idea is. Thus a snow-ball having the power to produce in us the ideas of white, cold and round, the powers to produce those ideas in us, as they are in the snow-ball, I call qualities; and as they are sensations or perceptions in our understandings, I call them ideas; which ideas, if I speak of them sometimes as in things themselves, I would be understood to mean those qualities in the objects which produce them in us." Here Mr. Locke, inaccurate as his language is, fully and unequivocally explains his meaning. Yet this circumstance does not shield him from the reprehensions of the Dr. "I believe," says Dr. Reid, "it will be difficult to find two paragraphs in the essay so unintelligible. Whether this is to be imputed to the intractable nature of ideas, or to the oscitancy of the author, with which he is very rarely chargeable, I leave the reader to judge. There are, indeed, several other passages in the same chapter, in which a like obscurity appears; but I do not choose to dwell upon them."

I can perceive nothing difficult or unintelligible in this language, except to those who are predetermined to misapprehend it. It is as if the author had said, when I speak of heat, cold, sweet, bitter, &c. conformably to vulgar notions, as existing in things themselves, which I admit to be only sensations or perceptions in us; I would be understood in this case to refer to those qualities or powers in objects, which are calculated to excite such sensations in us. Can any thing be more clear?

Again—"Taking it for granted," says the Dr. "that by the ideas of primary and secondary qualities, he means the sensations they excite in us, I observe that it appears strange, that a sensation should be the idea of a quality in body, to which it is acknowledged to bear no resemblance. If the sensation of sound be the idea of that vibration of a sound-

ing body which occasions it, a surfeit may for the same reason, be the idea of a feast." An admirable argument in the first sentence, and a no less admirable similitude in the second! Such comparisons may excite a smile at the expense of Mr. Locke, among the ignorant and undiscerning; but the philosophical world will learn in time, duly to estimate such unmanly expedients. He might as well have said, "if the sensation of sound, be the idea of that vibration of a sounding body which occasions it, John Falstaff may, for the same reason, be the idea of a glass of sack." The Dr. thus concludes his account of the primary and secondary qualities in bodies. "From the account I have given of the various revolutions in the opinions of philosophers about primary and secondary qualities, I think it appears that all the darkness and intricacy, that thinking men have found in this subject, and the errors they have fallen into, have been owing to the difficulty of distinguishing clearly sensation from perception, what we feel from what we perceive." Here we see what wonders are expected to be wrought by this great discovery, and how modestly these authors are in the habit of speaking of their own pretensions!

CHAPTER VIII.

Simple ideas derived from Sensation and Reflection.

THE next point in the system of Mr. Locke, to which Dr. Reid has taken exception, and which it is our purpose to vindicate, is that in which the former maintains, that all our simple ideas must be derived through the inlets of sensation and reflection. By sensation, he means that power of the mind, by which we receive perceptions of the qualities of external bodies; and by reflection or consciousness the attention which the mind pays to its own operations. Now it is an established maxim in philosophy, that no more causes of things are to be admitted, than are both true and sufficient to explain the phenomena. Until, therefore, we shall discover some ideas which could not have gained access to the mind, through the inlets of sensation and reflection, but must evidently have had, in the language of Mr. Locke, another postern to be admitted by; the doctrine of this philosopher must be regarded as established. Let us hear what Dr. Reid has to say in refutation of it. In essay 1, ch. 3, of *Active Powers*, he speaks the following language—"Mr. Locke having refuted the Cartesian doctrine of innate ideas, took up, perhaps, too rashly, an opinion that all our simple ideas are got either by sensation or by reflection; that is, by our external senses or by consciousness of the operations of our own minds. Through the whole of his essay he shows a fatherly affection to this opinion, and often strains very hard to reduce our simple ideas to one of these sources or both. Of this, several instances might be given, in his account of our idea of substance, of duration, of personal identity. Omitting these as foreign to the present subject, I shall

only take notice of the account which he gives of our idea of power." The opinion of Dr. Reid is, then, that our ideas of substance, duration, personal identity, and of power, form just exceptions from the principles of Mr. Locke, as they are not to be traced either to sensation or reflection, or to both. Let us proceed to state the ground of his objections, and see whether they be not susceptible of a satisfactory answer. It will be necessary to state anew the doctrine of Mr. Locke, that his objection may be comprehended, and as Dr. Reid has given a statement of that doctrine, sufficiently succinct and accurate, we shall content ourselves at this time with exhibiting it in his own words. The sum of Mr. Locke's account of power, according to the Dr., is this—"Observing by our senses various changes in objects, we collect a possibility in one object to be changed, and in another a possibility of making that change, and so come by that idea which we call power. Thus we say, that fire has a power to melt gold, and gold has a power to be melted; the first he calls active, the second passive power. He thinks, however, that we have the most distinct notion of active power, by attending to the power which we ourselves exert, in giving motion to our bodies when at rest, or in directing our thoughts to this or the other object as we will. And this way of forming the idea of power, he attributes to reflection, as he refers the former to sensation." On this account of the origin of our idea of power, the Dr. makes two remarks—"First, whereas he distinguishes power into active and passive; I conceive passive power is no power at all. He means by it the possibility of being changed. To call this power, seems to be a misapplication of the word. I do not remember to have met with the phrase passive power in any other good author. Mr. Locke seems to have been unlucky in inventing it; and it deserves not to be retained in our language. Perhaps he was unwarily led into it, as an opposite to active power. But I conceive we call certain powers active, to distinguish them

from other powers, that are called speculative. As all mankind distinguish action from speculation, it is very proper to distinguish the powers by which those different operations are performed, into active and speculative. Mr. Locke, indeed, acknowledges, that active power is more properly called power; but I see no propriety at all in passive power: it is a powerless power and a contradiction in terms!" This argument appears very plausible at first view, but when narrowly scrutinized, is found to contain a very frivolous objection and evident fallacy.

The distinction between active and passive power, is as old as language, and recognised in its structure; and at the same time as substantial as any of the maxims of philosophy. If Dr. Reid had recurred to the works of Aristotle, he would have found this distinction perpetually adverted to in the use of his terms *δυναμις* and *εντελεχεια*; and in the division which he makes of the soul into what he elegantly denominates the passive intelligent and active intelligent. What is this but determining it to possess passive and active powers? What is implied in the expression, the *vis insita* or *vis inertiae* of matter, so often mentioned in the philosophy of Newton and his coadjutors in natural science, and upon which its laws of motion are considered to be founded, but that matter has a passive power of receiving and retaining any impulse or motion that may be communicated to it? Is not the expression *vis inertiae*, force or power of inactivity, as much a contradiction, as that of passive power made use of by Mr. Locke, and what might as justly be represented as a powerless power? The fact is, philosophy, in order that she may communicate her lights to mankind, is obliged to accommodate herself, in some degree to their ordinary language and conceptions. Now perhaps, there is no distinction more easily comprehended by mankind, as coming constantly under the view of all, than that of passive and active powers. I apply my seal to the wax, and by muscular force or active power re-

siding in me, I am able by pressing to make an impression upon it. The wax is able not only to receive the impression but to retain it, that is possesses the passive power of doing both these things. Water, although it has power to receive the impression, cannot retain it. Now can any of our ideas be more clear and intelligible, than those which we have of the power possessed by wax of receiving and retaining impressions made on it, while water only receives without having the power of retaining impressions? Dr. Reid says, that he had never seen this distinction made by any good writer, and considers it unfortunate that Mr. Locke invented it; yet with very little trouble, we think, he might be referred to many of the best writers in all languages, who, if they have not expressed the thing in the same terms, have evidently adverted to it. We shall content ourselves in a matter of no great importance, with the following sentences from Mr. Harris's *Hermes*—"As wax," says he, "would not be adequate to the purpose of signature, if it had not the power to retain as well as to receive the impression; the same holds of the soul with respect to sense and imagination, (and memory, he should have said.) Sense is its receptive power, and imagination, (memory) its retentive. Had it sense without imagination, (memory) it would not be as wax, but as water, where though all impressions be instantly made, yet as soon as they are made they are lost." Here we find in substance, though not stated in so many terms, the doctrine of the passive powers of Mr. Locke, a language intelligible to all. If the term power should be exploded, in such cases, and that of capacity or any better one substituted in its place, it would not be material, and might, as Mr. Locke admits, be more technically correct: but Dr. Reid puts at hazard his reputation as a philosopher, when he would consider the term speculative, instead of passive, as opposed to active power. Speculation and action, as used in ordinary conversation and writing, are two different modes of exercising the active

powers of man, and as such may justly be discriminated from each other; but surely when as metaphysicians we would search for something opposed to active power itself, we should never expect to find it in speculation, which implies also the exercise of active power?

I proceed to the next objection made to the doctrine of Mr. Locke, which has more immediate relation to the present subject of my investigation. "I would observe," continues Dr. Reid, "that Mr. Locke seems to have imposed upon himself, in attempting to reconcile this account of the idea of power to his favourite doctrine, that all our simple ideas are ideas of sensation or reflection. There are two steps, according to his account, which the mind takes, in forming this idea of power; first, it observes changes in things; and secondly, from these changes it infers a cause of them, and a power to produce them. If both these steps are operations of the external senses or of consciousness, then the idea of power may be called an idea of sensation or reflection. But if either of those steps requires the co-operation of other powers of the mind, it will follow, that the idea of power cannot be got by sensation, nor by reflection, nor by both together. Let us, therefore, consider each of these steps by itself. First, we observe various changes in things. And Mr. Locke takes it for granted, that changes in external things are observed by our senses, and that changes in our thoughts are observed by consciousness.

I grant that it may be said, that changes in things are observed by our senses, when we do not mean to exclude every other faculty from a share in this operation. And it would be ridiculous to censure the phrase, when it is so used in popular discourse. But it is necessary to Mr. Locke's purpose, that changes in external things should be observed by the senses alone excluding every other faculty, because every faculty that is necessary in order to observe the change, will claim a share in the origin of the idea of power. Now, it is

evident that memory is no less necessary than the senses, in order to our observing changes in external things, and therefore, the idea of power derived from the changes observed, may as justly be ascribed to memory as to the senses. Every change supposes two states of the thing changed. Both these states may be past, one of them at least must be past; and one only can be present. By our senses we may observe the present state of the thing, but memory must supply us with the past; and unless we remember the past state, we can perceive no change. The same observation may be applied to consciousness. The truth, therefore, is, that by the senses alone without memory, or by consciousness alone without memory, no change can be observed. Every idea, therefore, that is derived from observing changes in things, must have its origin partly from memory, and not from the senses alone, nor from consciousness alone, nor from both together."

"The second step made by the mind, in forming this idea of power is this; from the changes observed we collect a cause of those changes, and a power to produce them. Here one might ask Mr. Locke whether it is by our senses that we draw this conclusion, or is it by consciousness? Is reasoning the province of the senses, or is it the province of consciousness? If the senses can draw one conclusion from premises, they may draw five hundred, and demonstrate the whole Elements of Euclid."

We have in this a rare example of that shallow and spurious metaphysic, which has been supposed to supersede the sound philosophy of Locke. Our idea of power cannot be derived either from sensation or reflection; because that idea can be obtained only by witnessing various changes in things, and we cannot become acquainted with any changes in things except by the aid of memory. The operation of the faculty of memory, as well as that of sensation, is necessary to our obtaining an idea of power. This is the reasoning, and let us put its validity to the test. I apply a lighted taper to a

parcel of gun-powder, and, an explosion taking place, the powder passes off in smoke. Now all these changes, the application of the taper, the explosion of the powder, and the passing off in smoke, are produced instantaneously, with the rapidity of thought itself, and in the twinkling of an eye. And yet, are they not sufficient to communicate to us an idea of power, of a power in the first instance to apply the taper, and a power in the fire to ignite the powder and convert it into smoke? And yet is there any one who will assert that an act of the memory must intervene in tracing the succession of these events? If there be any one disposed to think so, he will oblige us by settling the precise limits where perception ceases and memory begins. No one certainly would think that he was liable to the charge of any inaccuracy in his language, should he assert that he had seen all these things, and it would be the farthest from his thoughts to imagine that his memory had any thing to do in the matter. I see a carriage drawn by horses immediately passing before my eyes. Do I not perceive by my senses that the horses pull that carriage along, and have I not, at the same time, a full conviction derived from this perception, that those horses possess muscular force, strength or power, sufficient to produce this result? Am I reduced to the necessity of asserting that the faculty of memory must be exercised, in order to my attaining this knowledge? Cannot I have a perception of the two successive steps of the horses without the assistance of memory? This is analysing the operations of the mind with a vengeance, and frittering them down to infinitesimals or mathematical points. It is not doubted, or denied, that, in the more extended views which we take of things, as, for instance, when the philosopher is tracing and comparing the present phenomena of nature with his past experience, the perception and memory co-operate in their exercise and mutually intermix their lights, the perception furnishing memory with continually increasing materials; and the me-

mory contributing to the perfection of our perceptive powers: but when it is asserted, that it is impossible to contemplate any two events or changes, that take place in nature, however closely conjoined, so as to arrive at an idea of power, without the aid of memory, it is evidently a far-fetched refinement, and not supplied with sufficient arguments to sustain it.

The next part of the objection to Mr. Locke's account of the manner in which we obtain our idea of power, is, that he asserts, "from the changes observed we collect a cause of those changes and a power to produce them. Here one might ask Mr. Locke," continues the Dr., "whether it is by our senses that we draw this conclusion, or is it by consciousness? Is reasoning the province of the senses, or is it the province of consciousness? If the senses can draw one conclusion from premises, they may draw five hundred, and demonstrate the whole Elements of Euclid."

This objection also exhibits a specious exterior, but when closely examined, is found infected with a fatal fallacy.

Take the example I have before stated. Applying a taper to the powder, an explosion is produced. Is the slow and operose effort of reason necessary in this case, to inform us that the fire has power to produce that change in the powder? Does not a conviction of the existence of such a power necessarily accompany a perception of the effect? As when we look at the taper and the powder, a belief of their existence in nature, necessarily and immediately results from a perception of their qualities, so, as soon as we discern by the application of one body to the other, that certain alterations in the latter are effected, we, as immediately, are convinced that there must inhere in the one some force, power, or energy, thus to operate upon the other. When we perceive the qualities of bodies, we have an irresistible and instantaneous conviction of their existence; and when we see them act upon and produce changes in the state and appearance of each

other, we have as instantaneous and irresistible a conviction, that they must possess powers to produce these effects. We can assign no reasons for these convictions, but that such is the law of our constitution. It is the same law afterwards which leads us, when upon a uniform experience, we have discovered that no effects are produced or alterations effected throughout the system of nature, without the operation of some cause adequate to produce them, to arrive at the general conclusion, for every effect in nature there must be an adequate cause. Dr. Reid seems to have been betrayed into his objections to Mr. Locke's doctrine in this matter, from his misconceptions of his system. Supposing that Mr. Locke maintained the opinion that all our ideas are images or representatives of external things, in the mind; a difficulty would be presented (and it would undoubtedly, upon this scheme, be a real and insuperable one) to find any archetype in nature for our idea or image of power. An image or representative of power in the human mind, would undoubtedly be a singular entity or non-descript kind of being, which would puzzle learned Sorbonnists to ascertain its nature and properties. Upon this ground it is, that Mr. Hume, very consistently with his system, denies, that we have any idea of power, since there is no correspondent impression to which its origin can be traced. But here the Dr. will permit me to remark, that it would be a much more fair and natural inference, to conclude, that since Mr. Locke admits that we have ideas of power, duration, identity and others, which cannot possibly be images of any objects of human thought, whatever may be his occasional language on the subject, he never could have inculcated the principles of what has been denominated the ideal theory. Nothing appears to us more preposterously absurd, than that reason or any power of our minds should produce any simple idea, which has not gained admittance either through sensation or reflection. We might as well imagine that reason should give ideas of co-

lour to the blind, or those of sound to the deaf. The province of our understandings in such cases is evidently to arrange, combine and model into an endless variety of forms those simple ideas it has received by the inlets beforementioned, but can no more fabricate those ideas for its use, than the workman can fabricate new matter out of which to erect his building, and dispense with the materials with which God has furnished him. "It is not in the power," says Mr. Locke, "of the most exalted wit or enlarged understanding, by any quickness or variety of thoughts to invent or frame one new simple idea in the mind, not taken in by the ways before mentioned; nor can any force of the understanding destroy those that are there. The dominion of man in this little world of his own understanding, being much-what the same as it is in the great world of visible things; wherein his power, however managed by art and skill, reaches no farther than to compound and divide the materials that are made to his hand; but can do nothing towards the making the least particle of new matter, or destroying one atom of what is already in being. The same inability will every one find in himself, who should go about to fashion in his understanding any simple idea not received in by his senses, from external objects: or by reflection, from the operations of his own mind about them. I would have any one try to fancy any taste, which had never affected his palate, or frame the idea of a scent, he had never smelt; and when he can do this, I will conclude, that a blind man hath ideas of colours, and a deaf man true, distinct notions of sound."*

* The work of Mr. Locke abounds with passages of this kind, which are, undoubtedly among the finest specimens of fine writing. But Mr. Stewart, it seems, is entirely insensible of beauties of this nature. In a small tract which has just come to this country, I find him asserting "that with respect to Mr. Locke's style, it may further be observed, that it resembles that of a well educated and well informed man, rather than of a recluse student, who had made an object of the art of composition. It every

Thus it appears that Mr. Locke's doctrine, that our idea of power is derived from sensation and reflection, is not justly liable to exception. It may be proper to add that he thinks our clearest ideas of active power, are derived from reflection, or that attention, which we pay to our own voluntary exertions in producing effects.

where abounds with colloquial expressions, which he had probably caught by the ear from those whom he considered as models of good conversation; and hence it now seems somewhat antiquated, and not altogether suited to the dignity of the subject." Such is the opinion of the Professor about Mr. Locke's style. Let us contrast with this, the sentiments of that judicious critic and excellent writer, Dr. Blair. After many encomiums of Mr. Locke, scattered through his lectures, he says, "In English, Mr. Locke's celebrated Treatise concerning Human Understanding, may be pointed out as a model of the greatest clearness and distinctness of the philosophical style." The truth is, that it is that kind of style, which is precisely suited to philosophical subjects. Such subjects do not admit of that pomp of diction and decoration of imagery, which might be allowed in orations and popular addresses of any kind. But we should augur ill of the taste of any people, who should consider his style as "too colloquial," or "antiquated," or "unsuited to the dignity of the subject." When a style like that of Mr. Locke, characterised by such genuine simplicity and unaffected graces, shall be generally underrated by a people, it would require no uncommon penetration or extraordinary pretensions to the prophetic spirit, to predict that their taste and letters were declining. When instead of the neatness and perspicuity of Mr. Locke's phraseology, I see a writer glittering with such expressions as these; "Elements of the philosophy of the Human Mind," "Fundamental Laws of Human Belief," "Primary Elements of Human Reason," "Analysis of Imagination," "Generalization of a Fact," &c. &c. I involuntarily turn away my eyes, as from objects too dazzling bright for my feeble vision. Others may annex distinct ideas to all such terms, and may find a pleasure in this kind of writing; but I must confess, that my mind is so singularly formed, and so dull of comprehension, as to be unable either distinctly to understand it, or to relish its beauty. Let those who can, derive gratification and instruction too, provided this be possible, from the perusal of such writers, but I must be allowed to avow, without subjecting myself to the imputation of undervaluing the judgments of others, that they do not suit my taste or strike my fancy.

CHAPTER VIII.

Of Duration.

PASSING over the preliminary observations, with which Dr. Reid commences his strictures upon Mr. Locke's doctrine about duration, I shall proceed immediately to the consideration of the objections themselves. The idea we have of duration, is thought also to be one of those simple ideas, which could have been obtained neither by sensation nor reflection. "Reflection," says Mr. Locke, "upon the train of ideas, which appear one after another in our minds, is that which furnishes us with the idea of succession; and the distance between any two parts of that succession, is that we call duration." Upon this account so natural and simple, Dr. Reid makes the following remarks—"If it be meant that the idea of succession is prior to that of duration, either in time or the order of nature, this I think, is impossible; because succession, as Dr. Price justly observes, presupposes duration, and can in no sense be prior to it; and therefore, it would be more proper to derive the idea of succession from that of duration. But how do we get the idea of succession? It is, says he, by reflecting upon the train of ideas, which appear one after another in our minds. Reflecting upon the train of ideas, can be nothing but remembering it, and giving attention to what our memory testifies concerning it; for if we did not remember it, we could not have a thought about it." Accordingly, the Dr. maintains, in opposition to Mr. Locke's theory, that our notion of duration is to be traced only to the exercise of memory.

In regard to the objection of Dr. Price, which appears to be concurred in by Dr. Reid, who is certainly ready enough on all occasions, to avail himself of any thing that forms an exception to the principles of Mr. Locke; I have to remark to both of them, that it would always be worth while, fully to study and understand an author, before we undertake to animadvert upon his principles. Mr. Locke had more thoroughly studied and understood these matters, than probably any other man who ever lived, certainly than any author whose works have been conveyed to us. In reference to Price's opinion, that the idea of succession cannot be prior to that of duration, either in time or the order of nature, because succession presupposes duration, and can in no sense be prior to it; I observe that I admit the premises, as I am sure would Mr. Locke, without allowing the conclusion. It is true, that duration is prior in time, and the order of nature to succession, but not in the *order of our ideas*. It was of the *origin* and *order of ideas*, that Mr. Locke was speaking, and not of the order of time or nature, and to this distinction, the Drs. do not seem to have adverted. And yet this distinction is all-important, as to the decision of the present point. Undoubtedly, between one event and the next that succeeds, which gives us an idea of succession, some time, however small it may be, must intervene, and duration, therefore, in the order of nature must precede succession. But not so in the order of our perceptions. Mr. Locke has proved, I think, with unanswerable force of argument, that we are rendered sensible of the existence and progress of time, only by the train of ideas that succeed each other in our minds, as appears from the phenomena of a reverie, and a deliquium in which we are unconscious of the lapse of time, and a sound sleep in which the two points of duration, in which we fall into it and awake, appear to touch each other; and moreover, that if it were possible for us, during any

length of time, to keep the same idea perpetually in view of the mind, we should in that case be utterly unconscious that any such time was passing. Those who are accustomed to intense thought or application of the mind to study or business, can easily enter into this view of the subject. The little they are able to judge, concerning the lapse of time in such cases, when a few thoughts occupy and engross their whole attention, can lead them easily to conceive, that could their attention possibly be fixed on one idea only, all consciousness of its course would be at an end. Now, if this doctrine be just, and it never has been and never can be refuted, suppose a man to begin for the first time to think. We say, that while the first idea occupied his mind, however great the duration in which it might subsist there, he would have no notion of the progress of time, until another made its appearance upon the stage, and that was followed by a third &c., which would give him the idea of succession, and in immediate connection with it, marking the intervals between his ideas, that of duration. Until, therefore, we observed the train of our ideas, as they pass and repass in the mind, we could have no idea of time, and our idea of succession, would be prior to that of duration, though in the order or course of nature, duration must precede succession.

But we have another difficulty to contend with, besides that of Dr. Price, with which this doctrine of Mr. Locke has been embarrassed, for whose origin we are, I believe, entirely indebted to Dr. Reid. The Dr. seems so resolutely predetermined to put Mr. Locke in the wrong, that he disputes with him every inch of ground. Mr. Locke maintains, that our idea of duration, like all our other simple ideas, is derived from reflecting upon the train of our ideas, and assigns to memory no part of the task of giving us this notion; Dr. Reid maintains, that it is to be ascribed exclusively to memory, and perception has nothing to do in the matter. It seems strange to make memory, whose office is to

recall events and ideas that have passed, the sole agent in giving us an idea of time and duration, as if our perceptions were in the interim entirely quiescent; and the opinion is rendered preposterously absurd, when it is recollected, that all that the power of memory can enable us to do, is to revive those perceptions, which had been previously excited, or in other words, recollect what was previously known. How can memory communicate to mankind any intelligence, which they had not before received by perception, when its sole province is to renew that intelligence! But in order, if possible, to bring to a conclusion this great controversy between two such high authorities, I must again beg Dr. Reid to ascertain the exact limits, where perception ceases and memory begins. Is perception to be limited to a second, to a single inhalation of the breath, a pulsation of the heart, or the twinkling of an eye? Until this is ascertained, I am afraid a captious philosophy may raise endless doubts in the case. We folks of vulgar apprehension, are apt to suppose that things which take place at the present time, are objects of perception. As for instance, at this time, the ideas of Bacon, and his method of induction; of Newton, who applied it to natural philosophy; and Locke, who carried it also into the science of mind, may pass rapidly before my view. I avow that I perceive these ideas as passing in my mind at the present. But Dr. Reid complains, that this mode of expression is inaccurate and unphilosophical. "It may be observed," says he, "that if we speak strictly and philosophically, no kind of succession can be an object either of the senses, or of consciousness; because the operations of both are confined to the present point of time, and there can be no succession in a point of time; and on that account, the motion of a body which is a successive change of place, could not be observed by the senses alone, without the aid of memory." This to be sure, is a sublime flight of philosophy, and much beyond the reach of Mr. Locke, and it is

not to be wondered at, that he was too dull to attain to it. The very act of perception itself, one would think takes up more than the Dr.'s single point of time. I take up a cloth of beautiful green, and struck with its appearance, I prolong my observation of its quality, am I not in this case engaged in an act of perception? This may be called, indeed, a doctrine entirely new. "But," says the Dr. "the motion of a body, which is a successive change of place, could not be observed by the senses alone, without the aid of memory." Indeed! This is extraordinary intelligence. I cannot then, see that carriage in motion before me, and should not say that I perceive it in motion, but I remember it in motion. This would be a change in terms, worthy of all remark and consideration. What is understood by that point of time, to which the operation of sense and consciousness are thus confined? Cannot I say, that I perceived that lightning pass from the clouds to the earth? Must memory here lend her aid also? Is not the time taken during a flash of lightning, short enough to form the Dr.'s point of time; and yet I think it demonstrable, that unless there was a succession of ideas in our minds during the flash, we should not perceive that it passed through any portion of space. The Dr. proceeds—"As this observation seems to contradict the common sense, and common language of mankind, when they affirm that they see a body move, and hold motion to be an object of the senses, it is proper to take notice, that this contradiction between the philosopher and the vulgar, is apparent only, and not real. It arises from this, that philosophers and the vulgar, differ in the meaning they put upon what is called the present time, and are thereby led to make a different limit between sense and memory. Philosophers give the name of the present, to that indivisible point of time, which divides the future from the past." Here then, we have arrived at the meaning of the Dr.'s single point of time, and the difficulty is removed, and the whole mystery solved. He means, that

sensation and consciousness are confined to an indivisible point of time, which is time present, philosophically considered. We have heard it maintained, that matter is infinitely divisible, although some have thought, that by the time it was infinitely divided, it would be very nearly reduced to nothing; and we presume the Dr. must consider time, as susceptible of as much division as matter. An indivisible point of time, therefore, must be a point of time wonderfully small, so small, that whatever may be its adaptation to the operations of beings superior to us, it certainly seems totally unsuited to the nature of such finite creatures as we are. We are assured, that we could neither move a limb, draw a single breath, twinkle an eye, or perform a single operation, bodily, mental, or mixed in it. If this be the Dr.'s notion of the present time, and the philosophical meaning of the word, we do not wonder that he maintains, that we cannot have perceptions of duration, time, motion, &c. without the aid of memory. The only matter of surprise is, that he does not maintain, there can be no such thing as sensation and consciousness at all; since he affirms that they are confined to an indivisible point of time, and we are sure there would not in such an inconceivable instant, be time for them to creep in. Such are the ridiculous puerilities and follies, that have been palmed upon the learned world, as profound speculations of science, and what is still more astonishing, which the learned world has appeared willing to regard in that light!

I find on this topick, Dr. Reid's principles of grammar, no better than those of his metaphysics. "As the purposes of conversation, make it convenient to extend what is called the present, the same reason leads men to extend the province of sense, and to carry its limits as far back as they carry the present. Thus a man may say, I saw such a person just now; it would be ridiculous to find fault with this way of speaking, because it is authorised by custom, and has a distinct meaning. But if we speak philosophically, the

senses do not testify what we saw, but only what we see; what I saw last moment, I consider as the testimony of sense, though it is now only the testimony of memory." When I say, I saw such a person just now, does this expression imply, that my senses now testify what I saw; and not rather that my memory testifies, what my senses did, or rather enabled me to do on a former occasion? There is nothing unphilosophical or inconsistent with the soundest and deepest logic in the structure of language in this respect. It would seem impossible to misunderstand it.

Let us now hear the Dr.'s argument in opposition to Mr. Locke. "Having considered the account given by Mr. Locke of the idea of succession, we shall next consider how, from the idea of succession, he derives the idea of duration. The distance," he says, "between any two parts of that succession, or between the appearance of any two ideas in our minds, is what we call duration." To conceive this the more distinctly, let us call the distance between an idea, and that which immediately succeeds it, one element of duration; the distance between an idea, and the second that succeeds it, two elements, and so on. If ten such elements make duration, then one must make duration, otherwise duration must be made up of parts that have no duration, which is impossible. I conclude, therefore, that there must be duration in every single interval or element, of which the whole duration is made up. Now it must be observed, that in these elements of duration, or single intervals of successive ideas, there is no succession of ideas, yet we must conceive them to have duration; whence we may conclude with certainty, that there is a conception of duration, where there is no succession of ideas in the mind." This argument is exhibited with all the formality and display of a mathematical demonstration, and evidently appears to be regarded as conclusive. The Dr. would probably have been astonished to be told, that it has not the smallest force in invalidating the princi-

ples of Mr. Locke. The whole difficulty is solved, and the fallacy of the argument exposed, by simply adverting to the distinction before made, between the order of nature and the order of our ideas. Nothing can be more certain, than the first proposition of the Dr., that supposing the distance or intervals between our successive ideas to be considered as single elements, the whole of which, when put together, constitute duration, it is evident, there must be duration in every single interval or element, of which the whole duration is made up. We will admit, moreover, "that in these elements of duration, or single intervals of successive ideas, there is no succession of ideas, and yet we must conceive them to have duration." But, when from these premises the Dr. would draw the conclusion, that there is a conception of duration, where there is no succession of ideas in the mind, we would inform him that he is utterly wrong. He has proved with Dr. Price, that duration in every case must precede succession in the order of nature, and that there must be conceived some interval or element of duration, between every two successive ideas or perceptions of the mind; but he has not reached by his syllogism, the very point in controversy, which is to show that we should have a perception or idea of that duration, even while it was passing, previous to a succession of ideas taking place in the mind. Mr. Locke's principles do not lead us to deny, that time must be passing in the intervals of our ideas, but that had it not been for the succession of our ideas, we should have had no information about it. Afterwards, indeed, in the progress of human perceptions and improvements, when by the succession of ideas in our minds, we have obtained conceptions of succession, duration, time, we learn to measure them by various standards, and to ascertain their progress, even when we ourselves are insensible of it, as by the revolutions of the heavenly bodies, and the various instruments of motion.

I shall conclude the subject of duration by considering some objections of Dr. Reid, to the consequences or conclusions which Mr. Locke has drawn from the foregoing account of duration, which he thinks may serve as a touchstone to discover how far it is genuine. "One conclusion, is," says the Dr. "that if it were possible for a waking man to keep only one idea in his mind without variation or the succession of others, he would have no perception of duration at all; and the moment he began to have this idea would seem to have no distance from the moment he ceased to have it. Now that one idea should seem to have no duration, and that a multiplication of that no duration, should seem to have duration, appears to me as impossible as that the multiplication of nothing should produce something." Here the Dr. still errs by confining himself to a kind of mathematical calculation, instead of recollecting that he is solving the phenomena of the human mind. There can be no greater absurdity than to assert, that a multiplication of nothings or no durations should produce somethings or duration. But surely there can be no absurdity in supposing that such may be the laws of the human mind, that one portion of duration might pass by unnoticed by it, until some circumstance should occur, as for instance the succession of another perception to call its attention to it. The fallacy here, therefore, a third time turns upon not separating in our conceptions, the phenomena of our ideas from those which are exhibited in that system of nature from which they are derived.

"Another conclusion," proceeds Dr. Reid, "which the author draws from his theory, is, that the same period of duration appears long to us when the succession of ideas in our mind is quick, and short when the succession is slow. There can be no doubt but the same length of duration appears in some circumstances much longer than in others; the time appears long when a man is impatient under any pain

or distress, or when he is eager in the expectation of some happiness. On the other hand, when he is pleased and happy in agreeable conversation, or delighted with a variety of agreeable objects that strike his senses or his imagination, time flies away, and appears short. According to Mr. Locke's theory, in the first of these cases, the succession of ideas is very quick, and in the last, very slow. I am rather inclined to think that the very contrary is the truth. When a man is racked with pain, or with expectation, he can hardly think of any thing but his distress; and the more his mind is occupied by this sole object, the longer the time appears. On the other hand when he is entertained with cheerful musick, with lively conversation, and brisk sallies of wit, there seems to be the quickest succession of ideas, but the time appears shortest." If but a small portion of that attention, which Dr. Reid has devoted to unfounded animadversions upon the principles of Mr. Locke, had been directed to the illustration and enforcement of them, how much more would moral and metaphysical science be indebted to him! But as much eclat would not have followed from the humble attempt to confirm, establish and extend the principles of another, as in broaching a new system, or endeavouring to subvert an old one. This prurient propensity in writers to become the founders of new systems, has been of incalculable detriment to science. To an author whose purpose is to rear a reputation to himself, of what importance is it, that his predecessor has been the faithful interpreter of nature, and successfully discovered the truth? If more fame is to be attained by denying the truth of his doctrines than by admitting them, they are controverted without hesitation. In the passage just quoted, the doctrine of Mr. Locke, when rightly understood or explained, is not at variance with Dr. Reid's, and certainly is abundantly confirmed by fact and our daily experience. The simple assertion of Mr. Locke, is, that as a general proposition it is true, that the same period

of duration appears long to us when the succession of ideas in our mind is quick, and short, when the succession is slow; but he does not assert that this law is subject to no exceptions.

From the extreme thinness and subtilty of the subject, it is very difficult to ascertain any general laws that serve to regulate the action of the human mind, and to the operation of which all the phenomena may be referred. Exceptions to these rules must be expected to recur; but these, instead of vacating or annulling the law, only serve to confirm its existence. My daily experience convinces me of the truth of the general maxim prescribed on the subject of our perceptions of succession and duration; that the more rapid the succession of ideas, the longer does time appear, and the more slow, that succession the shorter. If I spend the morning in my study engaged in close attention of the mind, to some interesting subject, I am scarcely sensible of the progress of time, inso-much that I am often surprised to find the hour of dinner arrived; but if the same time be devoted to making or returning visits in the city, the change of scene, and the variety of ideas excited by meeting with different characters, and entering into various and desultory conversations, makes the morning assume its natural dimensions. If I set off upon a journey, the diversity of objects presented to my view, and the rapid train of ideas, which are awakened by riding through a cultivated country, and having picturesque scenery displayed to my view, make time seem to rest upon his wing, and I in one day, appear to have gone through the lapse of several. I take it, therefore, that the general maxim of Mr. Locke, if properly interpreted, is irrefragably true; that, *cæteris paribus*, the more rapid the succession of our ideas, the slower appears the progress of time, and vice versa. I say *cæteris paribus*, because it implies that the mind be in the same state or condition as to tranquillity or disturbance, happiness or misery, indifference or strong desire, pain or

pleasure, at each time in which the experiment is made. When we are under the influence of any strong passion, or disquieted by extreme pain, then this general law of our nature is contravened by the opposing or preponderating influence of another part of our moral constitution. It is not, therefore, true, as asserted by Dr. Reid, that upon Mr. Locke's principles, when a man is impatient under any pain or distress, or eager in the expectation of some happiness, the succession of his ideas is very quick, since time appears long to him; and on the other hand, when he is pleased, and happy in agreeable conversation, or delighted with a variety of agreeable objects that strike his senses or imagination, the succession of ideas should be slow, since time flies away, the reverse of which in both cases he supposes, and justly, to take place. Mr. Locke's principles lead to no such conclusions. He merely propounds a law of our moral constitution, from which cases of this kind exhibit exceptions, present contradictory phenomena, and for the solution of which we must have recourse to some other constituent principle of our nature. A Newton fixing his attention closely in the solution of a philosophical question, is insensible of the lapse of time, the metaphysician would say, because the succession of his ideas would be slow, and he would find pleasure in the occupation. Let the same Newton be racked with illness; and his mind now turned from scientific pursuits, is wholly engrossed with his pain; his time now passes sluggishly away, not because the succession of his ideas is more rapid than before, for in this case also it would be slow; but because a new circumstance intervenes, that changes the nature of the case, the pain is irksome, and the time in which it is endured must appear long, although in a different state of mind it might pass rapidly away. The phenomena exhibited by the human mind, in its perceptions of the progress of time are endless, and sometimes inexplicable; because not susceptible of being reduced to any general laws

of our constitution. "I have heard a military officer," says Dr. Reid, "a man of candour and observation, say, that the time he was engaged in hot action, always appeared to him much shorter than it really was. Yet, I think, it cannot be supposed that the succession of ideas was then slower than usual." There is no necessity for supposing that the succession of ideas was slower than usual on such an occasion, or for resorting to a theory discrepant from that of Mr. Locke, in order to explain the phenomenon.

Several considerations may be offered, which serve to account in a satisfactory manner for the fact, that to an officer under such circumstances time might appear short.

In the first place, the active employment of his mind, and almost total absorption of all its powers, in the great object of his pursuit, viz. to obtain the victory, and in order to this purpose, the watching of the movements of the enemy, and directing those of his own army, would to a man naturally brave and accustomed to danger, have a tendency to accelerate to him the progress of time. Deep and solicitous occupation, in any business which we are extremely anxious to perform, makes us lose all sense of the lapse of time.

In the next place, while it is not denied, that during the heat of action, and the rapid movements of two contending armies, our ideas would succeed each other with great rapidity; yet it is to be observed also, that, except with a few of them which were the most interesting, the very rapidity of their succession would prevent them from producing the usual effect upon the mind, by occasioning it, from a distinct notice taken of each of them, to mark the progress of time. As bodies may pass within our sphere of vision, with such immense velocity as to be imperceptible to the eye, so when the mind is excited by the heat and noise of battle, many of the ideas which shoot through the fancy in such quick succession, would be utterly unnoticed. We know that lightning consists of a small portion of electric fluid, passing from the

cloud, and that like all other bodies, it travels by distinct and successive stages from the cloud to the earth. Why then, does it appear to us to be but one continuous stream of fire, reaching from the cloud to the earth. Evidently, because its velocity is so great, that our perceptions are not quick enough to mark the several stages of its progress. Beings of quicker perceptions may do this, for ought we know, and behold it in its descent, like a ball of fire moving through space, in the same manner as we might view the motion of a red-hot cannon ball, passing slowly through the hemisphere. "If a burning coal, be nimbly moved round in a circle," says Newton, "with gyrations continually repeated, the whole circle will appear like fire; the reason of which is, that the sensation of the coal in the several places of that circle, remains impressed on the sensorium, until the coal return again to the same place. And so in quick consecution of colours, viz. red, yellow, green, blue and purple, the impression of every colour remains on the sensorium, until a revolution of all the colours be completed, and that first colour returns again. The impressions, therefore, of all the successive colours are at once in the sensorium, and beget a sensation of white."* These facts assist us in furnishing a solution of the problem relative to the officer before mentioned, as they go to show, that many of the objects which passed in rapid review before his senses, during the heat of contest, would not convey distinct notices to the mind, and of course would pass by unheeded, and that the succession of our ideas may be so very rapid as to run into each other, and thus present only a single perception to the mind. A commander thus circumstanced would after all, have his whole attention engrossed by a very few ideas, whose succession alone would be distinctly marked by him. These considerations, it is presumed, are sufficient to explain the

* Newton's Optics.

fact, that time might appear short to him during the heat of action. But suppose as a spectator of the same scene, a friend, wife or child, deeply interested for his fate, looking intently upon it; and could we imagine a period, in which time would advance with a more lingering pace, than while he saw him in the rage of battle, and every moment in danger of death? In this case, deeply interested as he would be, yet he would not be thrown into such a tumult of emotions and confused mixture of sensations, as not to be able leisurely to mark the succession of his thoughts, and at the same time would be wrought up to the highest pitch of anxiety. Every minute in that condition might appear an hour.

Let, then, a fair construction be given to the maxim of Mr. Locke, and it will be found to have its foundation in a just philosophy, and in correct and comprehensive views of the structure and operations of the human mind.

Since writing what is contained above, in conversation with an intelligent military officer of our country, I have been furnished with some facts, that completely establish the theory which is maintained. He remarked, that, in the different engagements in which he was concerned, his perception of the progress of time, varied according to circumstances. In general, he said, when his mind was occupied merely with the management of his own men, and watching the movements of the enemy, time appeared shorter than usual: insomuch, that on one occasion, when the opposing force gave way sooner than was anticipated, both he and his soldiers expressed their surprise at their speedy flight; but were no less astonished to find, upon computing the time, that the greater part of an hour had passed in the action. On another occasion, however, he said, when he was contending with a superior force, and in danger of being overpowered by them, being every moment in expectation of a reinforcement, time appeared very tedious and long,

until the reinforcement arrived. Now these facts, I conceive to be decisive of the point at issue; and prove beyond all reasonable doubt, that the explanation above attempted of these phenomena, is correct. For here, we find that although the ideas must have passed in very quick succession through the mind of the officer above mentioned, yet a single circumstance, such as the anxious expectation of relief, fastening the attention painfully upon that object alone, was able to change the whole train of his perceptions, cause every less interesting thought to pass entirely unnoticed, while the mind was wholly engrossed by that single object, and thus make time appear long; although without the intervention of that circumstance it always appeared short. Thus it appears, that although many ideas may pass through the mind in a given time, yet where a few entirely engross its attention and deeply engage its hopes or fears, precisely the same effect is produced, as if but few ideas had passed through it; the less interesting being entirely unnoticed, and those which are more interesting completely engrossing it. The facts above stated, go to prove also, that although in the midst of a multitude of ideas passing through the mind, a few only may be noticed by it, so as to produce their usual effect; yet it will depend upon the nature of the object in immediate view of the mind, and the emotions which they excite, whether time shall appear long or short. When the officer was merely engaged, under ordinary circumstances in the heat of action, and a few great objects occupied his whole attention, time appeared short; but as soon as a circumstance that was painfully contemplated intervened, for instance, the anxious expectation of a reinforcement to relieve him from danger and difficulty; or in other words, a new principle of our nature was called into operation, that lengthened out the lapse of time, as does hope deferred, it then appeared long and tedious. Nothing more can be wanted to show the

correctness of the principles which we have above prescribed.

The two remaining ideas which Dr. Reid thinks cannot be traced back, either to sensation or reflection, are those which we have of substance, and of personal identity. His views in reference to the first, are thus expressed by him—“It were to be wished that Mr. Locke, who inquired so accurately, and so laudably into the origin, certainty, and extent of human knowledge, had turned his attention more particularly to the origin of these two opinions, which he firmly believed; to wit, that sensible qualities must have a subject, which we call body, and that thought must have a subject, which we call mind. A due attention to these two opinions, which govern the belief of all men, even of sceptics, in the practice of life, would probably have led him to perceive, that sensation and consciousness, are not the only sources of human knowledge, and that there are principles of belief in human nature, of which we can give no account, but that they necessarily result from the constitution of our faculties; and that if it were in our power to throw off their influence upon our conduct and practice, we could neither speak nor act like reasonable men. We cannot give a reason, why we believe even our sensations to be real and not fallacious; why we believe what we are conscious of; why we trust any of our natural faculties, &c.” Here we were led to conclude, in the first part of this paragraph, that we should meet with a sufficient argument to show, that sensation and consciousness, are not the only sources of human knowledge; but to our disappointment, we find it only asserted, what no one denies, that there are principles of belief in human nature, of which we can give no other account, but that they necessarily result from the constitution of our faculties. Had Mr. Locke attempted to assign a reason why, when we see figure and extension, we are irresistibly convinced that

there is something figured and extended, the strictures of the Dr. would justly have applied to him.

This he has not done, but in other parts of his works, places our belief in such cases upon the same ground as that assigned it by Dr. Reid, viz. the testimony of sense; and in this matter, he undertakes to trace to its origin, and ascertain our idea of substance, both that which is material, and that which is immaterial. The one he refers to sensation, and the other to reflection; and of that conception, in both cases, he gives the following account. All philosophers agree, that all that we know of things is from their properties. With the properties or qualities of matter, we become acquainted by sensation, as its hardness, softness, figure, colour, heat, cold, &c. and with the properties of mind by reflection, as of thinking, feeling, &c. Now we are assured, that where there are the qualities of figure, colour, extension, there must be something, coloured, figured, extended; and where there are the attributes of thought, willing, &c. there must be something capable of the exercise of these powers. As we cannot penetrate into the intimate essences of things, all the notion we can form of substance in either of the cases before mentioned, either of matter or mind, is, that it is the substratum or support of accidents or qualities. Thus all the idea we can have of substance is very obscure and inadequate, being able to consider it only as the essence or internal structure on which its properties depend. The schoolmen, indeed, speak of the substantial forms upon which the properties depend; but this is the mere idle use of a term without any distinct meaning annexed to it, and serves to explain nothing. It is true that the term support or substratum, still used in the schools, serves no better to give us a clear and distinct idea of substance; but it was not the purpose of Mr. Locke to convey any adequate perception of substance, for of this he knew the human mind was incapable, but merely to explain in what our idea of it consists. We

see, therefore, that in Dr. Reid's brief strictures upon Mr. Locke's doctrine upon this point, he has confounded two things entirely distinct from each other, the ascertaining of our idea of substance, and an attempt to explain the ground of our belief, that any substances exist. How are we to repose confidence in the sentiments of an author who, in a matter so plain, so egregiously misapprehends his subject?

The last particular which he enumerates as forming an exception to the doctrine of Mr. Locke, that all our simple ideas are derived from sensation and reflection, is that of personal identity. As, however, he has no where distinctly stated the ground on which the opinion rests, that our idea of personal identity cannot be traced back either to the one or the other assigned inlets of human knowledge, but has rather confined his strictures to the general principles of Mr. Locke; and as, moreover, the same method of reasoning, by which we have answered his other objections, would be applicable in this case, we shall follow him in this course, and simply indulge ourselves in a few observations upon the subject of identity, and personal identity. Mr. Locke, in his entertaining disquisition upon this subject, has said many excellent things, and his opinions are unobjectionable, except on the topic of personal identity; and it is remarkable, that upon this also, while he exhibits another proof of the liability even of the greatest and most exalted geniuses, to occasional failures in their attempts at the investigation of nature, and has failed in attaining to the truth himself, by his luminous exposition of the subject, he has diffused so clear a light around it, as to render it easily perceptible to his readers.

The object of inquiry in the schools was to ascertain the principium individuationis, or principle of identity, and as Bishop Butler has remarked, (who in a short treatise on this subject has detected the slight inaccuracy of Mr. Locke, and at the same time placed it in so clear a point of view, as to preclude the possibility of any rational controversy concern-

ing it in future,) they might as well have inquired about the principle of equality or similitude, or any other of our simple perceptions. We all understand as perfectly what is meant by identity, as by the equality or similitude of two objects; and as it is a simple idea, it is not susceptible of definition. "Now when it is asked," says Bishop Butler, in that lucid dissertation affixed to his analogy of natural and revealed religion; "when it is asked, wherein personal identity consists, the answer should be the same, as if it were asked, wherein consists similitude or equality; that all attempts to define, would but perplex it. Yet there is no difficulty at all in ascertaining the idea. For as upon two triangles being compared or viewed together, there arises, to the mind the idea of similitude; or upon twice two and four, the idea of equality; so likewise upon comparing the consciousnesses of one's self, or one's own existence in any two moments, there as immediately arises to the mind the idea of personal identity. And as the two former comparisons not only give us the ideas of similitude and equality, but also show us that two triangles are alike, and twice two and four are equal; so the latter comparison, not only gives us the idea of personal identity, but also shows us the identity of ourselves in these two moments; the present, suppose, and that immediately past; or the present, and that a month, a year or twenty years past."

This is a very profound and just observation, and serves completely to unravel the whole mystery. All that is left us, therefore, in such cases, is merely to ascertain our ideas of identity as the term is applicable to different objects, without attempting the fruitless inquiry in what identity itself consists. As it is a relative idea, it will assume a different meaning, according to the nature of the things spoken of, and the objects which are compared. When we speak, for instance, of the identity of a mass or congeries of matter, of a plant, a man, or a person, we express different shades of the same

thought; all however, equally clear and intelligible, but susceptible of being embarrassed by a disputatious and frivolous philosophy. When we talk of the sameness of an unorganised bulk or congeries of matter, we mean that it possesses all the particles which enter into its composition, the sameness of a plant implies that it is the identical organized substance endowed with the principle of vegetable life, and which at one time may be a scion, at another the largest tree of the forest; when we speak of the identity of man, we mean the same bodily form and features added to a rational soul, with all its properties and powers. Mr. Locke, I think, without any ground in reason, makes a distinction between the identity of the man, and the person, considering the last, as the sameness of a rational being as exhibited to itself. This distinction is certainly not a just one; since the identity of the man and the person, is precisely the same object of contemplation to the mind, but is only viewed through different media, as it were, when beheld by ourselves or others. We can judge of the identity of other things and other men only by the appearances they exhibit to us, and by the properties of their nature, with which from experience we become acquainted; we can judge of the identity of ourselves, only by sensation and by consciousness, with the aid of memory, by sensation deriving our knowledge of our external form and features, by reflection our knowledge of the rational soul within, with all its powers, affections, desires, hopes, remembrances, anticipations, &c. with which the heart of the individual himself alone can be acquainted. "In like manner," says Mr. Locke, "if two or more atoms be joined together in the same mass, every one of those atoms will be the same, by the foregoing rule; and whilst they exist united together, the mass consisting of the same atoms, must be the same mass, or the same body, let the parts be never so differently jumbled; but if one of those atoms be taken away, or one new one added, it is no longer the same mass or the same

body. In the state of living creatures, their identity depends not on a mass of the same particles, but on something else; for in them the variations of great parcels of matter alter not the identity. An oak growing from a plant to a great tree, and then lopped, is still the same oak; and a colt grown up to a horse, sometimes fat and sometimes lean, is all the while the same horse; though in both these cases there may be a manifest change of the parts; so that truly they are not either of them the same masses of matter, though they be truly one the same oak, and the other the same horse; the reason whereof is, that in these two cases of a mass of matter and a living body, identity is not applied to the same thing." Again, he says, "the identity of the same man consists, in nothing but a participation of the same continued life, by constantly fleeting particles of matter, in succession, vitally united to the same organized body."

After stating the subject with so much accuracy and justness of conception, it seems singular that he should have fallen into so glaring an error as to make personal identity consist in consciousness. His own language in several places is utterly inconsistent with the doctrine he espouses. "To find wherein personal identity consists," says Mr. Locke, "we must consider what person stands for, which, I think, is a thinking intelligent Being, that has reason and reflection, and can consider itself as itself, the same thinking thing in different times and places, which it does only by that consciousness, which is inseparable from thinking, and seems to be essential to it." Here we find the very opinion of Bishop Butler distinctly stated, a person is a thinking intelligent being, that has reason and reflection, and can consider itself as itself, the same thinking thing in different times and places, by means of consciousness. It is unaccountable that Mr. Locke should after this, have maintained that our personal identity consists in consciousness, when he here considers consciousness, and very justly, as that act of the mind by which we become acquainted with our own persons, or that

thinking principle within, and with its sameness at one moment and another, or at different periods of life. He might as well, in any other case, have confounded our perception of an object with the object of perception. Consciousness with the aid of memory, becomes the mirror in which those beings called ourselves are successively disclosed to us, and invariably accompanies thought and other operations of the mind; but can no more be regarded as including the person, than a part can include the whole. "Self," repeats Mr. Locke, "is that conscious thinking thing (whatever substance made up of, whether spiritual or material, simple or compounded, it matters not) which is sensible or conscious of pleasure and pain, capable of happiness or misery, and so is concerned for itself, as far as that consciousness extends." Here one of the attributes of that thinking thing called self, is said to be consciousness, how then, could consciousness be the very thinking thing itself? It will be perceived, therefore, that while Mr. Locke makes this point perfectly clear to his readers, by an unaccountable oscitancy of understanding, he lost sight of the truth himself.

Mr. Locke perceived that it would be objected to his doctrine of personal identity consisting in consciousness, that if so, as soon as we lose the memory of any actions, we are no longer the persons who perpetrated them. He has stated this objection in full, and attempted, though I think very unsuccessfully, its refutation. The fact is, that if by personal identity, be meant the sameness of a rational being, composed of a material and immaterial part, to itself, the appearance which our bodies display to our senses is included in the idea, as well as the sameness of our minds.

The person, is a creature composed of body and mind, and which, whether contemplated by others, and denominated the man, or by ourselves, and constituting what we call self, is invariably the same thing, although exhibited to the different observers under different aspects. Could the soul of Percy,

together with its consciousness, have passed by a miraculous transmigration into the body of John Falstaff, and the case is possible, would he have been the same person?

I shall conclude this article with noticing briefly the strictures of Dr. Reid, upon the doctrine of Mr. Locke. "First," says he, "Mr. Locke attributes to consciousness, the conviction which we have of our past actions, as if any man may now be conscious of what he did twenty years ago. It is impossible to understand the meaning of this, unless by consciousness be meant memory, the only faculty by which we have an immediate knowledge of our past actions." It is certain that without the agency of memory we could have no information of our past actions, but that they would be forever buried in oblivion; and it will be found that Mr. Locke recognizes the operation of that power, in order to disclose to us our past consciousnesses; and when he speaks of our consciousness of past actions, he only indulges himself in a very ordinary phraseology, a phraseology which although not technically correct, from the frequency of its use it is almost impossible to lay aside; and which, moreover when it is recollected, that with the memory of our past actions is inseparably connected the remembrance of a consciousness that we ourselves performed them, is not so unphilosophical a mode of expression as might at first be imagined. So difficult is it for philosophers completely to rid their disquisitions of the customary modes of expression, that we find Dr. Reid himself, when treating of this subject, unconsciously adopting the language which he animadverts upon in Mr. Locke. "Suppose," says he, "a brave officer to have been flogged at school for robbing an orchard, to have taken a standard from the enemy in his first campaign, and to have been made a general in advanced life. Suppose also, which must be admitted to be possible, that when he took the standard, he was conscious of his having been flogged at school, and that when made a general he was conscious of

his taking the standard, but had absolutely lost the consciousness of his flogging. It follows from Mr. Locke's doctrine that he, who was flogged at school, is the same person who took the standard, and that he who took the standard is the same person as he who was made a general, but that he who was flogged at school is not the person who was made a general. Therefore the general is, and at the same time is not, the same person who was flogged at school." It needed not such a syllogism as this to detect the error of Mr. Locke's principle, as Bishop Butler had already done this, to the entire satisfaction of the philosophick world. But it will be remarked, that the General is here said to be conscious of having taken the standard, and when he took the standard to have been conscious that some time before he was flogged at school, that is, he was conscious of his past actions; adopting the very inaccurate mode of expression, for which the Dr. reprehends Mr. Locke. The fact is, that setting aside a frivolous propensity to cavil at the doctrines of preceding philosophers, so very prevalent in the Scottish school of metaphysicks, by which the science of the human mind, instead of being advanced, has been involved in a cloud of subtilty and trifling disquisition; inasmuch as the memory enables us at any moment to place before the contemplation of the mind all the material actions of our past lives, and to bring along with them the consciousnesses of our having perpetrated them; (for it is one thing to recollect, that such actions were performed, and quite another, to remember that they were performed by us) it is no great stretch of that liberty allowed us in conveying our ideas, to say that we are conscious of our past actions. By no extravagance of figure we might say, that memory presents all the past events of our lives, as so many objects in that little interior world called our spirits, which are the objects of immediate vision or perception to the mind.

Lastly. "It may be observed," says Dr. Reid, "that, in this doctrine, not only is consciousness confounded with memory, but which is still more strange, personal identity is confounded with the evidence which we have of personal identity." Here again the Dr. maintains a doctrine altogether incompatible with his own system.

He maintains, that by consciousness we could not obtain even the idea of personal identity, since by that act of the mind we can arrive at a knowledge only of what is immediately present in it; how then can it be the evidence of personal identity? He should have said, conformably to his own theory, that memory is the evidence of personal identity. This, indeed, would not be true, if by the expression memory or consciousness is the evidence of our personal identity, he meant to exclude every other species of evidence. I may be convinced by the testimony of credible witnesses, or by other circumstances, that I was the person who performed a certain act, although my memory does not retain it, or it took place at a period of life lost to me in utter oblivion, on account of my early age, or a fit of illness. In the Arabian Night's Entertainments, we are told that the Caliph, Haroun-Alraschid, once upon a time, while taking his periodical tour at night, through the city of Bagdat in disguise, fell in company with a citizen of singular humour, by the name of Abou-Hassan, who took him to his house and sumptuously entertained him. During the course of conversation, Abou-Hassan, not knowing that his guest was the commander of the faithful, expressed the great satisfaction it would afford him for a short time, to exercise the authority of the Caliph. From that moment, Haroun-Alraschid, determined to amuse himself, by giving the citizen an opportunity of tasting what he supposed to be the sweets of arbitrary power. By his order, Abou-Hassan is taken during sleep, and transported while unconscious of it, to the palace, and placed in the royal bed. Directions are given,

that the same attendance and homage shall be paid him, as it is customary to bestow upon the real Caliph. Every possible preparation is made to convince him that he is such.

Upon waking in the morning, what is the astonishment of Abou-Hassan, to find himself thus laid under a canopy of state, surrounded with the splendour of royalty, with a magnificent retinue of servants and courtiers subject to his will, and sedulously anticipating his wishes; served with the most costly dishes, obsequiously attended by all the greatest men of his nation; and, at length summoned to the tribunal, from which he is to distribute justice to the submissive crowd. For a long time he cannot bring himself to believe that he is not dreaming, and that all he perceives is not a delusion of the senses. His doubts, however, are gradually dissipated by what he now perceives to be real facts, and he at length is brought to believe himself the true and genuine Caliph. In this story we find some admirable touches of nature, as is usual in that wild and grotesque performance, interspersed with improbable fictions. The memory and consciousness of Abou-Hassan united, would seem to make it certain, that he is only an obscure individual; but the testimony of those around him, and the real scenes continually presented to his view, afford an evidence which soon preponderates over that of his memory, and leads him to the conclusion, that he has been hitherto deluded with deceptive visions, and just now begins to behold things in their real state. In this eastern tale we see a faithful representation of nature, and Abou-Hassan might under such forms of government, readily find an antitype in real life. By violent attacks of illness, men are sometimes completely deprived of all memory of their past lives. Would it be impossible under such circumstances to convince them, that they are the same persons, who entered into certain engagements, or performed any previous acts of their lives?

BOOK III.—CHAPTER I.

On the Grounds of Human Knowledge.

THE doctrine of innate ideas having been refuted by Mr. Locke, and being now considered as exploded from philosophy, we have undertaken to show that all our simple ideas, are obtained through the inlets of sensation and reflection, as asserted by that metaphysician. We proceed to follow the progress of the human mind, in the acquisition of knowledge, and ascertain the foundations upon which it rests. Instead of the animated statue of Condillac, we will suppose a philosopher endowed with all the bodily and mental powers, bestowed upon our race by the Creator, and with a thirst for improvement, and a turn to scientific investigation, but entirely destitute of ideas, even of the original perceptions of sense, to set himself forth in the world in quest of information. By sensation or the power of perceiving, through the instrumentality of the five organs of sense, hearing, seeing, tasting, smell and touch, he derives intelligence of the external world, of all extended substances and their properties; and by reflection, he becomes acquainted with the internal world, or his own mind, and its properties and operations. From these two fountains flow all his knowledge, both of the physical and moral world. The senses internal and external, become our first instructors, and through their aid it is, that advancing from step to step, we gradually collect the lessons of experience, until at length after an ample accumulation of facts, by experience and observation, availing ourselves of the method of induction, we

establish the great maxim of truth, and principles of science. Experience, therefore, may be regarded as having its commencement in the notices, conveyed into the mind by sensation and reflection, and having its consummation in the great truths, to which we are able to attain by induction.

Before our philosopher has proceeded far in his examination of nature, he discovers that he is possessed of powers, that enable him to arrive at a new species of truth, not always depending upon experience, though posterior to it in the order of his attainments: namely, those truths which he discovers from tracing the connection of his ideas, or the immutable relations of things. These are called immutable and eternal truths, and properly constitute demonstration; such as those of mathematics, and some of those that come under the denomination of metaphysics, moral science, and natural religion. These all have their foundation, in what are denominated intuitive judgments, first principles or axiomatic truths, and lead us on frequently through the finest speculations of the human mind, to the most important and sublime conclusions.

Thirdly. Finding that there are many facts, at which it would be impossible for us to arrive, during the limited experience of any human being, we learn to open to ourselves a new source of information, in the testimony of other men.

Experience, intuition, and testimony, are justly regarded as the three grounds of human knowledge, and we shall proceed to treat of each of them distinctly, and illustrate in what part of our knowledge we are able to attain to absolute certainty, and where we must rest contented with probability.

CHAPTER II.

Of the Evidence of Experience.

IN the first place, experience, commencing in the simplest perceptions of sense and consciousness, and terminating in the most important and interesting conclusions of the inductive philosophy, is the first ground of human knowledge. It is wonderful to reflect upon how little is done for us by nature, in the matter of extending our acquaintance with things, and what vast acquisitions she has placed it in our power to make for ourselves. To begin with the senses. Our simple perceptions introduced by each sense, are almost reduced to an unit, our acquired perceptions form a sufficiently ample basis, on which to erect the vast and magnificent structure of human science and philosophy. To commence with the first and most simple elements of our knowledge. Suppose our philosopher to be in the state in which Adam was, when he rose in the full perfection of his powers, under the hands of his Creator, but uninstructed by him, and having every thing to learn of himself. Suppose him with all his faculties, external and internal, to commence his acquaintance with the objects around him. Sounds are wafted to his ears, and odours to his nostril, but he is uncertain that they proceed from any object exterior to himself, and concludes that they are mere sensations in himself, or modifications of his former conscious being. Let us suppose him next, to open his eyes upon surrounding objects. Light enters into them, but as the muscles connected with the pupil, have as yet been untaught to perform their office, he is unable to contract and dilate it, so as to receive upon the retina, the due proportion of rays, he is therefore dazzled and pained, and soon

relieves himself by closing the lids. In a short time, however, guided by instinct, and yielding to the force of nature, the muscles learn to execute their functions, and he is able to contemplate the objects that present themselves. Still he is unable to distinguish any thing but a plain surface, variously coloured, every thing appearing equally remote, or rather equally present, and to press upon his eye, and he cannot discriminate the smallest from the largest objects. This theory has been abundantly substantiated by fact and experiment. The man who was born blind, and couched in mature age by Cheselden, a distinguished English surgeon, declared that at first every thing seemed to touch his eye; and I am informed, that a woman in Pennsylvania, who, after her marriage had the cataracts removed from both her eyes, gives her testimony in confirmation of the same doctrine. The physician who performed the operation reports, that when her sight was restored, she declared that her sensations were indescribably delightful, but at the same time, her newly recovered power of vision was for some time, of very little use to her. She was perpetually stretching out her hands, from fear of running against objects, being unable to distinguish their distances or magnitudes; and when her own husband came into the room, she knew nothing of him until he spoke, and she recognized the voice to which she had become accustomed. Both Dr. Reid and Condillac, ascribe to Bishop Berkeley the merit of having first discovered that extension, figure, and space, are originally perceived by the sense of touch only, and not by sight; but, at the same time, that we would detract nothing from the merit of that great man, is not the same doctrine evidently held in that part of Mr. Locke's work, in which he undertakes to give a solution of the problem proposed to him, by his friend Molineux? The problem is this—"Suppose a man born blind, and now adult, and taught by his touch to distinguish between a cube and a sphere of the same metal, and nightly

of the same bigness, so as to tell when he felt one and t' other, which is the cube, which is the sphere. Suppose, then, the cube and sphere placed on a table, and the blind man to be made to see. Quere, whether by his sight, before he touched them, he could now distinguish and tell which is the globe, which the cube. To which the acute and judicious proposer answers, not. For though he has attained the experience of how a globe, how a cube affects his touch, yet he has not yet attained the experience, that what affects his touch so or so, must affect his sight so or so; or that a protuberant angle in the cube, that pressed his hand unequally, shall appear to his eye as it does in the cube. I agree with this thinking gentleman, continues Mr. Locke, whom I am proud to call my friend, in his answer to this his problem; and am of opinion, that the blind man at first sight, would not be able to say with certainty, which was the globe, which the cube, whilst he only saw them; though he could unerringly name them by his touch, and certainly distinguish them by the difference of their figures felt. This I have set down, and leave with my reader; as an occasion for him to consider, how much he may be beholden to experience, improvement, and acquired notions, where he thinks he has not the least use of, or help from them; and the rather, because this observing gentleman further adds, that having upon the occasion of my book, proposed this to divers very ingenious men, he hardly ever met with one, that at first gave the answer to it, which he thinks true, till by hearing his reasons they were convinced." In giving a solution to this problem, which subsequent experiments have completely confirmed, Mr. Locke not only discovered his deep insight into this part of our nature, prior to any experiments made upon the subject, for he refers to none; but at the same time, led the way to all those discoveries, which have been since made in regard to the original and acquired perceptions, not of sight only, but also of all the senses. If he did not explore the

whole field afterwards traversed by Bishop Berkeley, he here puts into his hand the key that led him and subsequent inquirers, into the deep mysteries of our original perceptions.

Mr. Cheselden's account of the observations made by a young man, who was couched by him in his thirteenth year, is so curious and interesting, that it may be worth while to transcribe the most important particulars contained in it. "Though we say of this gentleman," says Cheselden, "that he was born blind, as we do of all people who have ripe cataracts, yet they are never so blind from that cause, but that they can discern day from night; and for the most part in a strong light distinguish black, white and scarlet, but they cannot perceive the shape of any thing: for the light by which these perceptions are made, being let in obliquely through the aqueous humour, or the anterior surface of the chrystalline, by which the rays cannot be brought in a focus upon the retina, they can discern in no other manner, than a sound eye can through a glass of broken jelly, where a great variety of surfaces so differently refract the light, that the several distinct pencils of rays cannot be collected by the eye into their proper foci; wherefore the shape of an object in such a case cannot be at all discerned, though the colour may. And thus it was with this young gentleman, who though he knew these colours asunder in a good light; yet when he saw them after he was couched, the faint ideas he had of them before, were not sufficient for him to know them by afterwards; and therefore, he did not think them the same which he had before known by those names. Now scarlet he thought the most beautiful of all colours, and of others the most gay, were the most pleasing; whereas the first time he saw black, it gave him great uneasiness, yet after a little time he was reconciled to it; but some months after seeing by accident a negro woman, he was struck with great horror at the sight. When he first saw, he was so far from making

any judgment about distances, that he thought all objects whatever touched his eyes, as he expressed it, as what he felt did his skin; and thought no objects so agreeable as those which were smooth and regular, though he could form no judgment of their shape, or guess what it was in any object that was pleasing to him. He knew not the shape of any thing, nor any one thing from another, however different in shape or magnitude, but upon being told what things were, whose form he knew before from feeling, he would carefully observe that he might know them again; but having too many objects to learn at once, he forgot many of them, and, as he said, at first he learned to know, and again forgot a thousand things in a day. One particular only, though it may appear trifling, I will relate. Having often forgot which was the cat and which the dog, he was ashamed to ask, but catching the cat, which he knew by feeling, he was observed to look at her steadfastly, and then setting her down said, so puss, I shall know you another time. He was very much surprised that those things which he had liked best, did not appear most agreeable to his eyes, expecting those persons would appear most beautiful that he loved most, and such things to be most agreeable to his sight that were so to his taste. We thought he soon knew what pictures represented which were showed to him, but we found afterwards we were mistaken; for about two months after he was couched, he discovered at once that they represented solid bodies; when to that time he considered them only as party-coloured planes, or surfaces diversified with variety of paint; but even then he was no less surprised, expecting the pictures would feel like the things they represented, and was amazed when he found those parts, which by their light and shadow appeared now round and uneven, felt only flat like the rest; and asked which was the lying sense, feeling or seeing? Being shown his father's picture in a locket at his mother's watch, and told what it was, he acknowledged a likeness, but was vastly surprised, asking how

it could be, that a large face could be expressed in so little room; saying, it should have seemed as impossible to him, as to put a bushel of any thing into a pint. At first he could bear but very little light, and the things he saw, he thought extremely large; but upon seeing things larger, those first seen he conceived less, never being able to imagine any lines beyond the bounds he saw. The room he was in, he said, he knew to be but part of the house; yet he could not conceive that the whole house could look bigger. Before he was couched, he expected little advantage from seeing, worth undergoing an operation for, except reading and writing; for he said, he thought he could have no more pleasure in walking abroad than he had in the garden, which he could do safely and readily. And even blindness, he observed, had this advantage, that he could go any where in the dark much better than those who can see; and after he had seen, he did not soon lose this quality, nor desire a light to go about the house in the night. He said every object was a new delight, and the pleasure was so great that he wanted ways to express it; but his gratitude to his operator he could not conceal, never seeing him for some time without tears of joy in his eyes, and other marks of affection. A year after his first seeing, being carried upon Epsom Downs, and observing a large prospect, he was exceedingly delighted with it, and called it a new kind of seeing. And now being lately couched of his other eye, he says, that objects at first appeared large to this eye, but not so large as they did at first to the other; and looking upon the same object with both eyes, he thought it looked about twice as large as with the first ... couched eye only, but not double, that we can any ways discover." Mr. Cheselden adds in another paper printed by itself, that he has brought to sight several others who had no remembrance of ever having seen; and that they all gave the same account of their learning to see, as they called it, with the young gentleman above mentioned, though not in so many

particulars; and that they all had this in common, that having never had occasion to move their eyes, they knew not how to do it, and at first could not at all direct them to a particular object; but in time they acquired that faculty, though by slow degrees.”*

But to proceed with our philosopher, whom we have supposed to be in the condition of the primitive man, without supernatural illumination or intercourse, being endowed only with the faculties of body and mind, and commencing the exercise of them. We have said, that supposing him to have been placed in this untutored state in Eden, as soon as he opened his eyes on the scene around him, every sound that was conveyed to his ear, every odour wafted to his nostrils and every object presented to his vision would seem to be within himself. He would be a whole world to himself, and feel in a state of trance, enchantment or reverie. The spell would soon be broken by the impulses of nature, Possessed of muscular power, he would soon be prompted to exert it, and stretching forth his hand, would be surprised to discover that nothing opposed its motion, and that there was apparently an empty space before him. His legs would next be moved with a similar result. Emboldened by these attempts, our young adventurer would soon advance forward to any object, say the tree, that was before him, and beginning to examine it by the touch, would soon make himself acquainted with its figure, colour, and extension. Advancing from object to object, and subjecting them to the scrutiny of his sight and touch, he would soon arrive at a knowledge of their qualities, and the sight, at first under pupillage to the feeling, would soon learn to outstrip its instructor in the information it gave its possessor, and enable him to judge of things concerning which it could derive no lights from the touch. Thus commencing in a few

* See Smith's Optics, book 1.

simple notices would the senses soon convey to him their numerous acquired perceptions. He quickly becomes an adept in judging of sounds, tastes, odours, colours, extensions, figures. Hunger next assails him, and he goes in quest of food. Nature prompts him to gratify this appetite by eating the fruit upon the tree, which is immediately in view, and whose appearance and flavour are so grateful to the senses. It is impossible that he should determine, *a priori*, whether this fruit be wholesome or poisonous, and his indulgence in eating it would be to his benefit or injury. Were he at this time any thing of the philosopher in the true sense of the word, and capable of entering into disquisition about it, he would find good reason to conclude, that from the known wisdom of his Contriver, since it was agreeable to his senses, and he was prompted to partake of it, it must be innocent and useful. He is, as yet, however, by no means the philosopher in the true meaning of the word, but the simple pupil of nature, and child of impulse. Impelled by hunger, and under the sure guidance of instinct, that same principle which, in the present state of society, leads the child to apply its mouth to the breast of its mother, he plucks the fruit, enjoys it, and finds himself sated, and from thence concludes that this, and things like it, to which he feels a similar propension, are his appointed sustenance. As the fruit has relieved him from the uneasiness of hunger, and gratified his palate in one instance, he justly concludes that it will produce the same results in others. By a similar process of experiment and observation, he discovers that water will quench his thirst, fire will warm him at one distance, and burn him at another, some fruits are wholesome, and others noxious, some animals are innocent, and others fierce and destructive. Thus from the very first step that man takes in knowledge, and the earliest intimations of sense, to his noblest speculations in regard to the physical and moral world, he unconsciously enlists him-

self under the guidance of nature, and imbibes all his lessons in her school, and from listening to her unerring and sublime instructions. He could not by any force of reason determine a priori, that is, by reasoning from the nature and relations of things, that the fruit which hunger impelled him to devour, would not destroy him, that fire would burn, and water drown him, that some reptiles are harmless, and others venomous. From the outset, the whole compass of nature presents to him a profound abyss into which he cannot penetrate an inch without the line of experience and observation. When he avoids the fire that has once burnt him, casts away the fruits that have been found to be injurious, and flies from the viper that has endangered his life, what does he but by a just induction from facts, draw the conclusion that there is a quality in fire to pain and destroy him, in some fruits to injure him, and in some reptiles to poison him? Here then, we perceive the rise, and faint glimmerings of the inductive method of inquiry proposed by Lord Bacon, and for the discovery the recommendation and masterly illustration of which in his *novum organum*, he has rendered himself so deservedly celebrated. Man, as soon as he commenced his knowledge of nature, and passed from his original simple perceptions to those more complex conclusions to which he attained by reason and observation, had employed this instrument although ignorant of its power; and although philosophers for five thousand years afterwards, from the great Progenitor of our race to Thales, and from Thales to Lord Bacon, had lost sight of it, and losing sight of the broad and luminous way into which they had just entered under the guidance of nature, wandered into the intricate and shady paths of error, conjecture, and doubtful hypotheses. So just is the observation of Condillac in his *Treatise upon Sensations*. “Il resulte de cette vérité, que la nature commence tout en nous; aussi ai-je

demontr  que dans le principe ou dans le commencement, nos connoissances sont uniquement son ouvrage, que nous ne nous instruisons que d'apres ses le ons; et que tout l'art De raisonner consiste a continuer comme elle nous a fait commencer. Nature in all cases, is the safest guide, and most infallible instructor. She had put mankind in the true path of philosophical investigation, but under the influence of prejudice and passion, and amidst the refinements of an erring reason, they themselves soon deserted it. The first sun that Adam saw set, and the first darkness that overspread the earth, must have presented to him the most gloomy prospects, and filled him with frightful apprehensions. He could not have anticipated that it would ever rise again. He considered it no doubt a total extinction of the light of the world. But when he had repeatedly witnessed its risings and settings, his confidence in the permanence of the order of nature became fixed, and he concluded, that it would always continue to rise and set, and was the established cause of light and heat to the system. The same would be the case, in regard to all the other phenomena of nature. When the first cloud that he ever saw, overspread the hemisphere, it would be impossible for him to know, that it would bring rain, and might exhibit the phenomena of thunder and lightning; when the river, say the Euphrates, upon whose banks he lived, overflowed its banks, it would not be in his power to assign the cause of that appearance, and when any animal approached he would not be able to pronounce whether it would be harmless or not. Experience, however, would soon initiate him into all her lessons on these points. An accurate observation would soon teach him, that clouds were generally the cause of rain, while they themselves were occasioned by the condensation of vapours arising from the earth; that the stream was made to swell and overflow its banks, sometimes by heavy falls of

rain, and at other times, by the waters flowing from the Ocean; that some animals were innocent, others destructive. Thus far our primitive man, or philosopher, would reason correctly and become, in the language of Lord Bacon, *naturæ minister et interpres*. But here it is to be remarked, that at the same time, this mode of procedure would conduct him safely in the path of knowledge; yet he would be very liable, in this track, to be betrayed into endless errors. His strongest tendency in this particular, is to rush too precipitately from an individual instance to a general conclusion; and this is what the great Verulam denominates the anticipation of nature. For example, suppose our primitive man to see one of his children bitten by a rattle-snake, and immediately swell and expire; he would draw the inference, that the bite of all snakes is poisonous. Here we see, he would rush to a false conclusion, for out of two hundred and eighteen species of serpents, thirty two only are said to be poisonous. This is truly an instance of the anticipation of nature. Thus we see the rise of that inductive system of philosophising, which, although so simple in its commencement, and so obvious a mode of procedure to the understanding, was unknown to the school for so many ages, and by which the modern cultivators of science have accomplished such wonders. Taking its rise along with all our experience in the evidence of the senses, it enables us gradually to widen and expand our knowledge, until after compassing sea and land, we extend our researches beyond the limits of the earth, and take in the whole solar system, and even scan the heavens. It is at once the instrument by which we attain the most familiar lessons of daily experience, and the sublimest discoveries of philosophy.

From what has been observed in reference to this point, the unsoundness of that philosophy will be apparent, which supposes an inductive principle to be one of the constituent

powers in the constitution of the human mind; when it is perfectly evident, that there is no necessity for resorting to the supposition of such an original instinct, in order to solve the phenomena. All the conclusions at which we arrive, upon the ground of the inductive philosophy, are nothing more than the natural results of the application of reason and good sense, to an examination of the structure and the laws of nature. Experience furnishes us with facts, and reason deduces inferences from them. That philosophy of human nature is as much to be regarded as supposititious and false, which in order to save itself the labour of investigation, would ascribe too many original and elementary principles to the constitution of the human mind, as that which in its solicitude to simplify, would reduce them to too small a number. As, in the latter case, in order to give simplicity, consistency, and finish to any theories we form, we might be led, instead of following the guidance of nature, to put her to the torture in order to extort a favourable answer; so also in the former case we should be in equal danger, in order to save ourselves from the fatigue of frequent and attentive consultation of her, of allotting to her workmanship, materials disavowed by her, and interpolating new laws into her sealed and sacred volume. This mode of proceeding would put an effectual check to science in its attempts to remount to first truths. There is no necessity for admitting the existence of any original inductive principle in our mental constitution, to solve any of the phenomena of the human mind.

I shall first state the theory of Dr. Reid upon this subject, and then attempt its refutation. "This process of the human mind, is so familiar, that we never think of inquiring into the principles upon which it is founded. We are apt to conceive it as a self evident truth, that what is to come must be similar to what is past. Thus, if a certain degree of cold freezes water to-day, and has been known to do so in all time past,

we have no doubt but the same degree of cold will freeze water to-morrow, or a year hence. That this is a truth which all men believe as soon as they understand it, I readily admit; but the question is, whence does this evidence arise?"

Again. "Experience informs us that things have been conjoined in time past; but no man ever had any experience of what is future; and this is the very question to be resolved, how we come to believe that the future will be like the past?"

Accordingly the following is the Dr's. solution of the question. "The wise author of nature hath implanted in human minds an original principle, by which we believe and expect the continuance of the course of nature, and the continuance of those connections which we have observed in

time past." Again he says. "Upon this principle of our constitution, not only acquired perception, but all inductive reasoning, and all our reasoning from analogy, is grounded; and therefore, for want of another name, we shall beg leave to call it the inductive principle. It is from the force of this principle, that we immediately assent to that axiom, upon which all our knowledge of nature is built, that effects of the same kind must have the same cause. A child has found the prick of a pin conjoined with pain: hence he believes and knows, that these things are naturally connected, he knows that the one will always follow the other. If any man will call this only an association of ideas, I dispute not about words, but I think he speaks very improperly. For if we express it in plain English, it is a prescience, that things which he hath found conjoined in time past, will be conjoined in time to come. And this prescience is not the effect of reasoning, but of an original principle of human nature, which I have called the inductive principle. It leads often into mistakes but is of infinite advantage upon the whole. By it, the child once burnt, shuns the fire."

It forms no small objection to this theory, that it supposes a component part, and a very important part too, of our constitution, which had hitherto escaped the penetration of philosophers. In regard to many of the appearances exhibited by the human mind, and the solutions attempted to be given of them, philosophy may be supposed to have long wandered in the dark, from the extreme subtilty of its nature, and the rapidity with which its operations are performed, but it is hardly to be imagined, that their ignorance should have extended to the great principles of its organization. To me it appears no less absurd and unphilosophical, to speak of an original inductive principle of the mind, than it would be to talk of an analytical and synthetical principle; induction, when properly understood, being the instrument by which the mind attains to a knowledge of nature and its laws, and the others, the instruments by which it attains not only to experimental truths or maxims of science, but also to those which are usually denominated eternal and immutable truths. They all three, induction, synthesis, and analysis, are the vehicles employed by human reason to convey her on the road to truth and certainty. If all the appearances of the human mind can be accounted for from the operation of reason, and those other powers and instincts that have been allowed to belong to it, there is no necessity for admitting the existence of this new inductive principle, not recognised by nature as her offspring, or bearing her sacred image and superscription. An instinctive principle of induction, or an instinctive principle by which we draw inferences from facts, which implies, in its very terms, the exercise of reason, is as palpable an absurdity as can well be imagined. And what are the phenomena presented to our inspection, to account for which this supposed inductive principle of our nature must be resorted to? The belief which we have, that the future will be like the past; our confidence in the continuance of the order of nature, from

which results our assent to that axiom upon which all our knowledge of nature is built, that effects of the same kind must have the same cause. Let us put this matter to the test, and see if it will bear a trial of reason and argument. One would imagine that with the slightest pretensions to philosophy, we could hardly mistake in a matter so extremely plain. Suppose the philosopher or primitive man, of whom we have before spoken, to see for the first time water converted by the coldness of winter into a solid mass. According to Dr. Reid, by means of this inductive principle, he has an immediate prescience, to use his own phrase, that the two things, the coldness of the season, and the conversion of water into ice, which were then conjoined, would also be conjoined in time to come. Will any one believe this? Would not this be to give to mankind a most wonderful perspicacity to enable them, in the very outset of experience, to accomplish without labour what is the highest attainment of science, from a consideration of the present to be able to predict the future? It is evident that all he could possibly know in this case, would be, that cold had a tendency to harden water, but as to the future, it would not, it could not enter into his thoughts. There is no power with which man is endowed, which would enable him antecedently to experience, to look one moment into futurity, and determine what would be the state of things in the world, at a period subsequent to that in which he lived at the time. How, then, does he learn to repose confidence in the permanence of the order of nature? Most undoubtedly from frequent experience of that order. Upon Dr. Reid's principles, Adam, when he saw the sun rise and set on the first day of his life, would have a prescience that it would rise and set in future. If this were true, Adam must have possessed a sagacity and penetration, much surpassing those of the most enlightened philosopher at the present day; for it is impossible for us to decide upon any ground of certainty and demonstration, that the sun will rise and set to-morrow. All

the evidence which we have that these events will happen, is only probable evidence. How do we arrive at this probability, which at length becomes so strong and satisfactory, that we repose, and justly too, entire and unlimited confidence in it? Surely by frequent and invariable experience of the established constitution and course of nature. On the first day Adam saw the sun rise and set, he would have no anticipation of its return; on the second, he would begin to anticipate it on the third, but yet with a slender degree of confidence; when he had frequently witnessed its diurnal progress, he would come to the conclusion, that it was the established order of nature that that luminary should rule the day. Thus it is from an invariable experience that reason deduces the inference, that the order of nature is established, and leads us from an observation of the past to anticipate the future, and place unshaken confidence in the permanence of nature's laws. The more frequent and complete our experience, the more satisfied does the mind become with the evidence, but in no case can it ever be made to amount to perfect certainty or to demonstrative proof. Here the weakness of human reason, and the extreme fallibility of the human mind conspicuously appear, since we are liable to endless errors, and in many respects must remain in the greatest uncertainty. The inhabitants of Lisbon or of the Carraccas in South America, reposed as entire confidence in that established order of nature, by which the earth was rendered firm and stable beneath their feet, but a few moments before it opened and swallowed them, as they had done for centuries before. We place confidence in the permanence of nature's laws from experience alone, and this confidence is the product of reason and good sense, exercising themselves about matters of this kind; but after the most complete and ample experience, we are able to arrive only at what is denominated moral proof, strong and satisfactory probability, but can never attain to entire certainty. There are no prin-

eiples of science which enable us to determine with perfect certainty, that on the morrow, all the springs of the solar system may not be unloosed, that mighty cement which binds the planets together be dissolved, and the whole structure go to ruin. How absurd and even ridiculous, therefore, does it appear to talk of an inductive principle which instinctively communicates to us a prescience of the future, and antecedently to experience, induces us to repose confidence in the permanence of the order of nature?

CHAPTER III.

Of the Inductive Method of Lord Bacon.

THE question here arises in what consists the method of inquiry denominated induction proposed by its author, which has made so much noise, and given rise to so much dissertation in the modern school? Lord Verulam in a single sentence has comprised the substance of this mode of investigation. “*Duæ viæ, sunt,*” says he, “*atque esse possunt ad inquirendam et inveniendam veritatem; altera a sensu et particularibus advolat ad axiomata maximè generalia, atque ex iis principiis eorumque immota veritate judicat et invenit axiomata media, et hæc via in usu est; altera a sensu et particularibus excitat axiomata ascendendo continenter et gradatim, ut ultimo loco perveniatur ad maxime generalia; hæc via vera est, sed intentata.*” The true way of philosophising according to him, is to attempt to draw no conclusions, not grounded upon an ample induction of facts; and be scrupulously attentive that all the principles we venture to establish, be supported in the utmost extent by experiment and observation. “*Whatever is not deduced from the phenomena,*” says Newton, “*is to be called an hypothesis; and hypotheses, whether metaphysical or physical, whether of occult qualities or mechanical, have no place in experimental philosophy.*” In this, therefore, lies the true secret of this new method of investigation, that our conclusions should always keep pace with our experience, which would seem to be as natural a mode of procedure to the understanding, as

that the farmer should expect to reap his harvest, only over that portion of the soil where, after due preparation of clearing, plowing, and harrowing, he has sown his seed. And yet natural and spontaneous as is this method of inquiry, when we set ourselves to the search and discovery of truth, there is no discipline to which the human mind submits with greater reluctance, and under the yoke of which it is prone to become more impatient and refractory. Who shall undergo the toilsome task of following the track of nature up the steep and craggy hill of science, where rocks and precipices are to be successively scaled, when by a single flight of genius, in the invention of a happy hypothesis, he may at once, in imagination, ascend to its top, and enjoy the prospects of fame and immortality presented to his view? Men of genius are above all others, the least inclined to endure this toil, although it is from them alone that any valuable accessions are to be anticipated to the stock of human learning, or to the dominion of man over nature. Hence it is, that after a slight and cursory contemplation of nature, the ingenuity of mankind is put upon the rack, out of the scanty materials they collect to invent hypothesis after hypothesis, which, after amusing their deluded votaries for a time, gradually sink into disrepute, have their deficiencies disclosed, and at length, like the baseless fabrics of a vision, vanish before the light of truth, and the lessons of experience.

Are we, then, it may be asked, to be prohibited from hazarding any hypothesis or propounding any theory, until we have travelled over the whole compass of things, or if I may be indulged the expressions, circumnavigated the whole globe of nature in quest of facts; and would not so strict a regimen imposed upon our inquiries, from the natural imbecility of the human faculties, and the limited sphere to which our experience is inevitably circumscribed, put a stop at once to all philosophical pursuits, and preclude the possi-

bility of our attaining to any principles, in which we can repose entire confidence? The solutions of these questions, will lead to a full development of the true nature and spirit of the inductive method of reasoning, which, although it has been abundantly discussed in the modern schools, has not even yet, in my estimation, been rightly understood by the greater part of those writers, who have undertaken to explain it.

We have seen that man can attain his first and simplest perceptions, both of body and mind, only by experience. It is not until the senses have exercised their functions, that he becomes acquainted with the properties of bodies, that marble is hard, gold is yellow, sugar sweet, and wormwood bitter. In like manner, it is by reflection only or consciousness, that he is introduced to a knowledge of the properties of his mind, as thinking, feeling, willing. The mind is endowed with no powers, which could communicate to him this intelligence, unless it be actually conveyed into his understanding, through the appointed inlets of sensation and reflection. Here, then, we cannot fail to perceive, that in the very commencement of our knowledge, nature opens to our view a dark and impenetrable wilderness, in which we cannot move a foot in safety, without the light of experience. Reason, intense as her light afterwards becomes, in tracing the abstract relations and habitudes of things, and in collecting from observation the materials out of which to form her structures, is here but a dim taper, that glimmers through the darkness, or an ignis fatuus, if too confidently trusted, to decoy us into bogs and brakes. To demonstrate the force and justness of these observations, let us imagine mankind made acquainted by perception, with the objects around them and their qualities, say with fire, water, sugar, salt, aqua regia, and gold. Suppose them, antecedently to experience, to begin to form conjectures about their probable operations on each other. Is it credible, that any conjectures

they might form, would make even the smallest approximation to the truth? Could they have any idea, that if water were thrown in sufficient quantity upon fire, it would extinguish it, that the same fluid would melt the sugar, and that aqua regia would dissolve the gold? It is evident that these are lessons which could be learnt only from experience, and that we are endowed with no powers, which enabling us to penetrate into the internal structures of these substances, would enable us at the same time, to foretell or determine a priori, what would be the results of their action upon one another. The king of Siam, inhabiting a country along the eastern side of the bay of Bengal, and within the tropics, could not be induced to believe the report of the Dutch Ambassador, that by the coldness of the winter, water, which always appeared to him in a state of fluidity, could ever become so hard, as to sustain upon its surface a loaded wagon. He could form no idea, of the manner in which cold could produce such a wonderful change in the consistence of water, and thence concluded that it was impossible. Unphilosophical as this conclusion was, it reveals to us an important fact in the science of the human mind, viz. in what complete ignorance we are left by the Creator, in regard to the operations, as well as the whole frame and organization of nature, until by experience and observation of phenomena, we have learned to trace back effects to the causes that produce them. The next stage, therefore, in our progress in human knowledge, is to endeavour to refer effects, or phenomena to the causes that produce them, and at this point it is, that the inductive method of Bacon properly commences. After having attained to an acquaintance with the properties of substances, and their operations upon each other, we next commence philosophers, and make an attempt to class the phenomena under general heads, and assign the causes that operated in the production of them. This is one of the efforts of reason, deducing its lessons from an obser-

vation of facts. We are not any longer contented with remarking, that clouds in summer dispense to us rain, and in winter snow; that the tides rise and fall; that lightning in hot weather passes from the clouds to the earth; that the sun retreats in the fall, and returns to us in the spring; but with the zeal of Democritus, we are curious to ascertain the reason of these changes and revolutions in the system. Now, it is clear, that as before we could not proceed a step, in enlarging our acquaintance with nature, without the aid of experience; so also, here, we might indulge ourselves in endless conjectures, without making the smallest approach to the truth, unless we devote ourselves sedulously to a complete collection of facts. If in our simplest perceptions we could obtain no information, save from a consultation of nature, and becoming the interpreters of her signs, how shall we expect by any other course of examination, to attain to the noblest conclusions of the understanding? Here it is that the mind of man, discovers itself brought into contest with the gigantic strength of nature, and exhibiting but the feebleness and incapacity of an infant, can accomplish nothing, except when assisted by the powerful instrument of induction. What kind of explanation is it to be supposed, should we at first afford of the several phenomena of the generation of the clouds, of the flux and reflux of the tides, of the recess and approach of the sun, during his passage in the ecliptic? Surely none that would be satisfactory; and the mind of man, while in the savage or barbarous state, failing at once in its endeavours to account for them, would seek a refuge from its incompetency to trace them through a series of natural causes, in ascribing them immediately to the agency of superior spirits; and Gods, to whom he would pay adoration and worship, would be imagined to take under their superintendence and control, these several departments of the system. Reflecting men, however, as soon as they passed out of this state of savagism to one of civiliza-

tion, would begin to trace with delight the chain of causes and effects. By the aid of this engine of induction, the farmer, although unconscious of it, would deduce all his maxims of husbandry, would observe with the nicest attention the appearances of the air and heavens, and learn to predict the changes of the seasons; would become acquainted with the most eligible periods of sowing his seeds, and gathering in his crops, and with the operation of all those causes, that contribute to diminish or augment the fruits of his labour.

Laying hold of this same instrument, the philosopher explains all the most interesting and stupendous phenomena, the flux and reflux of the tides, those of thunder and lightning, of earthquakes and volcanoes, the sizes, distances, and revolutions of the heavenly bodies.

We have seen that this instrument, although unknown to the schools for so many ages, was in the most familiar use amongst mankind; let us now proceed more fully to explain its nature and application. We have said, that the great secret in the inductive method of philosophising, consists in drawing no conclusions not warranted by facts, and attempting to establish no principles of science, but upon the solid and immovable basis of experience and observation. Nothing can be more true than this, and nothing more indispensable, in order to arrive at a just philosophy, than a rigid and persevering adherence to this method of inquiry. After only a partial or incomplete collection of phenomena, if we undertake to deduce general inferences, or what Bacon denominates his *axiomata generalia*, we sally forth into the dark, and almost always arrive at erroneous and false principles; or, if perchance they are true, we cannot repose with entire confidence and full assurance upon them: they do not rest upon the sure foundation of moral certainty. When, therefore, assuming them as settled and established truths, we undertake to form out of them, as is usually done, the *axiomata media* of lord Bacon, or intermediate maxims of philo-

sophy, we involve ourselves in a labyrinth of uncertainty, and our reasoning being vitiated in the outset, we only plunge more and more deeply into error.

On the other hand, let us reflect upon the inductive mode of procedure. Upon this plan, freeing our minds from all errors and prejudices, or their devotion to the numerous idols, as the abovementioned author calls them, which occasion them to view every object through a discoloured medium, we should appear at the entrance of the dominions of nature, as when we seek to enter into the kingdom of heaven, like little children, if we are desirous to gain admittance. *Homo, naturæ minister et Interpres*, says Bacon, *tantum facit et intelligit quantum de naturæ ordine, re vel mente observaverit; nec amplius scit aut potest. Nec manus nuda, nec intellectus sibi permissus, multum valet; instrumentis et auxiliis res perficitur; quibus opus est non minus ad intellectum quam manum. Causa verò et radix fere omnium malorum in scientiis ea una est; quod dum mentis humanæ vires falsò miramus et extollimus; vera ejus auxilia non queramus. Ut non alius fere est aditus ad regnum hominis, quod fundatur in scientiis, quam ad regnum cælorum; in quod nisi sub persona infantis, intrare non datur.*

Thus prepared for the enterprise in which we are engaging, we should proceed in the interpretation of nature, continenter et gradatim, cautiously and by a just gradation; first carefully examining all the phenomena presented to our inspection, comparing with the utmost attention and discrimination, those which are favourable and those unfavourable; and when we have advanced far enough in the matter of observation and experience, settle our axiomata media or intermediate principles of science; and having attained to this point in our progress, we must advance with equal care and attentive collection of facts, to our axiomata generalia or general principles. And when by this process we have remounted to great maxims, we may safely take a retrograde course

and apply them to the particular cases that arise. In this path certainty attends us at every step; in the other we soon wander into the dark and intricate by-ways of uncertainty and error. The one mode is like building a house out of solid materials, and ascending by regular gradations from the foundation to the top; the other is like attempting to erect the roof and its appurtenances upon an unfinished foundation. Abstract doctrines are best illustrated by examples. In Aristotle's treatise *De Cælo*, from the natural effect of the principle of attraction, and the circular shadow which the earth casts upon the moon during an eclipse, he deduced the inference that the earth is a sphere, contrary to the opinion of other philosophers of his time; and moreover, that it is not a very extensive sphere from the circumstance, that those stars which are perceptible to the observer, in one degree of latitude, entirely disappear, when he is removed a few degrees farther to the north or south. Here we have a specimen of a complete and an imperfect induction from facts, which at the same time that it displays the penetration of the Stagyræite, exhibits also the tendency of the greatest minds to rush precipitately into error, when they release themselves from the restraints of a chaste and rigorous investigation. The circumstance mentioned by Aristotle, that those stars which are perceptible to the observer in one degree of latitude, entirely disappear when he is removed a few degrees farther to the north or south, shows by irresistible force of argument, that the earth is not a very extensive sphere; and the consideration urged by him also in favour of the sphericity of the earth, that during an eclipse it casts upon the moon a circular shadow, is one of the best, if not the very best proof, of which the science, even of the present day, is in possession, in confirmation of that doctrine. But upon the principles of Aristotle, that the earth must be a sphere because all bodies are attracted towards the centre, and its shadow upon the moon is circular, it ought to have been a

perfect globe, whereas subsequent discoveries of science, have shown that it is not so, but a spheroid, or flatted at the poles. Here we see that Aristotle rushed too precipitately to his axiomata generale, the earth is a perfect globe; and had he proceeded, as is usually done, to form out of this proposition his axiomata media, as for example, that all bodies around the Earth's surface are equally remote from the centre, the degrees of latitude at the poles are equal to those at the equator, he would immediately have fallen in his calculations into the grossest errors. The truth is, that this very propensity, from a few particular instances to leap to general conclusions, to which the human mind finds so powerful a temptation, in the relief which they afford it from the fatigue of investigation, is the bane of philosophy, and the productive cause of all those idle theories that have been broached at different periods, and which, after glittering for a while upon the scene, and attracting the gaze of mankind, have then vanished from the view, and sunk into the gulf of oblivion.

Does, then, this philosophical regimen throw us under such rigorous restraints, that we are to be absolutely and peremptorily prohibited from framing any theories, or making any efforts to establish systems, however verisimilar they may appear, and however countenanced by facts, from an apprehension that subsequent discoveries may detect their fallacy, and facts afterwards elicited may contradict them? By no means. A few simple facts may lead to the suggestion of a true theory, but that theory should never be received as true, until substantiated by sufficient proof.

Newton, it is said, from reflecting on that remarkable circumstance of the tendency of all bodies to the centre, was led to ask himself, why may not this property of attraction which occasions this result extend itself to the moon, planets, and even to the sun himself? And that this train of reflection led him on to that discovery, which it is probable, is justly re-

garded as the greatest ever made by man. It is to be remarked, however, that he did not assume it as a fact, that the principle of attraction, as it is found upon our globe, extends its influence throughout the solar system, until by irrefragable reasoning he had demonstrated the truth of it. We are told, that when it first suggested itself to him, he undertook to prove it, but finding himself embarrassed by difficulties which were insuperable, he for a time abandoned it as untenable, until from a more extensive acquaintance with mathematical science, it again occurred to him that it was true, and commencing the investigation anew with those farther lights he had obtained, he found the proof satisfactory. In this consisted the difference between the system of Newton and that of Des Cartes, Leibnitz and others; the one is susceptible of strict demonstration, the others are hypotheses assumed without proof; and although they may serve to explain many of the phenomena, yet being unsubstantiated by fact and argument, must ever be regarded as the visionary schemes of ingenious men, rather than the legitimate productions of nature, and the faithful interpretations of her oracular voice. A few facts, therefore, may very properly lead to the conception of a general theory; but that theory is not to be admitted except it be demonstrated, not only by a few, but by an ample induction of facts. Harvey is said to have received the hint of the circulation of the blood, from remarking the nice and curious adjustment of the valves in the veins, that prevent the return of the blood as it passes into the heart; but he did not consider his doctrine as entitled to the attention of philosophers, until he had shown it to be true by repeated experiments with microscopes, and other methods. Lord Bacon makes a distinction between experience and experimenting, the one being considered as consisting in an observation of those appearances which nature, without any exertion on our part, spontaneously exhibits to

our view; the other, in active exertions made by us to go in pursuit of phenomena.

Enough has now been alleged to enable us to decide, without much difficulty, it is presumed, that question which has been lately raised, whether the modern school in its plan of philosophical investigation, has not arrogated to itself a merit above that of the ancient, to which it is not entitled, or in other words, whether Aristotle was not acquainted with the inductive method of lord Bacon. Dr. Gillies, the intelligent and able translator of the Moral and Political Philosophy of Aristotle, in his analysis of his works, roundly and confidently asserts that he was, and that while the illustrious Englishman was closely copying the works of the Stagyrите, he had not the candor and ingenuousness to acknowledge it, but rather indulges himself in many harsh and illiberal criticisms of the Greek. I am inclined to believe that if Dr. Gillies had studied the works of Bacon, with the same care and attention as he had those of Aristotle, and had taken pains to enter fully into the views of the former, in reference to his new modè of inquiry, he would not have done him so much injustice, but have come to a very different conclusion. I consider the method of induction as one of the sublimest hints, that ever entered into the mind of man. It is impossible to say, that had not this method been suggested by its author, it would not very naturally have presented itself to some other fortunate genius, since science was undoubtedly tending towards that result at the time; and the insufficiency of the old philosophy having been ascertained after a fair trial, a current was arising, which flowed strongly towards the invention and introduction of the new. Roger Bacon, the inquisitive and able predecessor of the Chancellor, and who proved himself worthy of the name which he bore, we know was so frequent and successful in experimenting as to obtain for himself the honourable appellation of the magician; and in an ignorant and credulous age, an age that could believe every thing but what was true, to expose himself to

persecution on account of his researches. Des Cartes, although, not averse from hypothesis, rejected the dogmas of the schools, and recommended and cultivated the study of nature. But notwithstanding, science at this time was evidently verging towards a reformation, who can say how long it would have been before philosophers would have gotten into the right way, had not that luminous mind appeared that pointed out to them the true path to knowledge, recommended them to pursue it with all the graces of eloquence and the force of erudition, and rendered them enamoured of the prospects of those great rewards, which would accrue to them from their successful prosecution of it? Let not the Englishman, therefore, be denied the praise which he has so justly merited. On the other hand, it is not to be denied, that we can scarcely turn over a page of the works of Aristotle, which have any reference to nature, but we find an immediate appeal to fact and experience. It is certainly true, what has been happily said of him, that if he did not interrogate nature, he listened to her with unremitting attention. His metaphysics, his moral and political philosophy, his treatise *De Cælo, de anima*, his mechanical questions, and in truth, all those of his works in which it was his purpose to investigate nature, fully attest the truth of this observation. How, then, can it be said that he was not apprised of the method of induction? The mystery is readily solved. It is a very different thing occasionally to have had recourse to experience and observation, in order to confirm his doctrines, and to have comprehended this method as the only legitimate vehicle for the advancement of science. We have before seen that as soon as man passes from the simplest perceptions of his nature, and begins to make inquiry concerning the operations of those objects upon each other with which he is daily conversant, he is obliged to have recourse to this instrument, in order to arrive at any of those maxims which ordinarily influence his conduct in life. The lessons

of wisdom derived from the intercourses of life, of husbandry, of moral duty, of peace and war, are all drawn from this source, as well as the finest speculations of science. Aristotle, therefore, in his physical and metaphysical works, did nothing more by making a continued appeal to nature, than had been done from the most remote periods by all who undertook, from considering the principles of human nature to deduce any of the maxims of truth and duty, or explain any of the appearances of the earth and heavens. This, however, is a very different thing from conceiving the sublime idea, that in order to arrive at a true theory of nature, or establish a just philosophy, instead of relying upon our own resources and ingenuity, we must direct our inquiries to her alone, and from her responses imbibe all our lessons of instruction. There is a wide and most essential distinction between directing the attention of the mind to the formation of a system, and occasionally appealing to nature only to confirm it, and directing our attention only to the collection of phenomena, on which alone to ground our conclusions. In the one case, we shall inevitably be led to spin subtil and ingenious theories out of our own brains, and then constrain all appearances to become tributary to them; in the other, we shall bend our own opinions to facts. The one mode of procedure, has led to the adoption of numberless hypotheses that have successively appeared upon the stage of human life, and then perished before the force of subsequent inquiry, the other since the time of Bacon, has been leading to the most important and interesting discoveries.

Thus we have endeavoured, as far as we are able, to explain what is implied in the inductive method of investigation. It implies the exercise of reason, ascending to and establishing the great principles of science from an observation of the appearances of nature, and inferring the causes of things from a rigorous examination of effects. The only way in which an argument of this kind can be invalidated, is by

the exhibition of contradictory instances or facts; and in this case, we must always limit our conclusions according to the number and force of these instances or facts.

Upon a review of the whole subject, it will appear, that all those branches of science must rest upon induction, in which the object of pursuit is, the investigation of either moral or physical nature. Natural and moral philosophy, chymistry, medicine, rhetoric, as far as the rules which it prescribes are founded in the principles of human nature, political science, in which case the statesman finds the whole history of man unfolding to him its ample page, and comprising an interesting series of moral experiments from which his lessons may be educed; all these are dependent for their sublimest maxims of truth and expediency upon the inductive method of investigation. Not a single step can be taken or attainment made in any of these branches of science, without the aid of this powerful instrument. And when we reflect upon the future probable progress of philosophy, and consequent extension of the dominion of man over nature, from the influence of this wonder-working engine, if skilfully and sedulously employed, the mind is filled with the most sublime anticipations. Upon this method of procedure, there are no limits to be set to the advances which may be made by continued accumulations to the stock of human knowledge. Here we attain, in truth and sincerity, to what was only assumed for purposes of deception and imposture, in the days of pagan ignorance and superstition, the art of vaticination. Induction, is the pillar of cloud that shall conduct us by a slow but sure progress, through many a devious track, indeed, and arduous ascent in the wilderness of nature, until at length we reach those exalted heights from which, like Moses upon the top of Pisgah, we may catch a view of the promised land of truth and knowledge, where the deepest mysteries shall be revealed to us, and in a kind of philosophic vision, from a contemplation of the past and

present, be able to predict the future. It is a voyage of discovery, a project of circumnavigating the whole globe of nature in quest of materials, out of which to construct the solid fabric of learning. It is the commencement of a campaign, furnished with armour that renders us invincible, where victory after victory may be obtained, and conquest after conquest achieved. In a word, induction, is the great vehicle by which in all the branches of modern science, such wonders have been accomplished. It was by the masterly use of this instrument, that Newton unfolded to the astonishment of mankind, the awful and hitherto impenetrable mysteries of the physical world; while Locke successfully pursued his way through those dark and shady paths in the dominions of the moral, which appeared impervious to the view and inaccessible to the footsteps of men; and, in fine, that all the modern investigators of nature, have so triumphantly extended their researches into her most hidden and remote departments.

CHAPTER IV.

Reasoning from Analogy.

CONNECTED with the system of induction, as a mean of acquiring information, though not amounting to so high a degree of proof or to as strong probability, is that of analogical reasoning. This too is a mode of arriving at conclusions to which we give assent, and in which our understandings repose confidence, of very early origin in the progress of human improvement. As soon as the philosopher or primitive man, whom we have before introduced upon the stage engaged in the pursuit of knowledge, began to collect the lessons of experience, he would naturally endeavour to extend his maxims beyond his own experience and observation, and make them comprehend cases that were similar. From the circumstance that the fruit which he found upon the tree, was wholesome in its operation upon his body and those of his immediate companions, he would conclude that it would be so to all other human beings like himself; if he found a few animals or plants, of a species innocent or noxious, he would extend the same properties to others that resembled them. This is reasoning from analogy. And if it be thought from the consideration, that when we have seen any cause produce a particular effect, whenever we see the same cause afterwards, we are prone to expect the same effect to accompany it, that there is need of the supposition of an inductive principle in our nature: from our proceeding so immediately to reasoning from analogy, there ought to be also an analogical one. There is no need, however, of the

assumption of either, in order to account for these results, as they naturally arise out of the exercise of right reason deducing its inferences from an observation of facts, and the order and constitution of nature. The ground on which all analogical reasoning must rest, is the uniformity of the constitution and laws of nature; and as there is undoubtedly very great uniformity in these respects in the system, this reasoning is not always to be rejected, although, as it may so readily lead us into error, it should be indulged with the greatest caution, and circumspection. The savage tribes for instance, who lived along the Atlantick coast, from observing that the tides rose and fell in all the rivers with which they were acquainted, might have inferred from analogy, that the same changes took place in all other rivers: but this would be an erroneous conclusion, as this is not the case universally. The medicinal roots which in one disease had been found efficacious, would, in like manner, be considered by them as applicable in others in which they might be injurious or fatal. Into a thousand errors of this nature, mankind would undoubtedly be betrayed from their imperfect acquaintance with the objects around them. The reasoning from mere analogy should, therefore, be very sparingly indulged, and diligently tested, before it be admitted as a sufficient ground of assent. And yet it is not to be denied that in many cases, it may furnish us with evidence entirely satisfactory to the understanding, although it can never amount to demonstrative certainty. Who, in visiting a new and undiscovered country would not be assured, that if there were any inhabitants living on it, they would prove to be precisely such beings as the rest of his species with whom he had been before conversant, and would not discredit the report of a voyager who should assert, that he had discovered a race of creatures, holding the rank of ours, but totally unlike them in form, features, understandings, passions, ideas, and habits? Have we any doubt, that in

those northern and southern regions, not yet explored by civilized man, all the phenomena of the earth and heavens are exactly the same as in the climates we inhabit, that they have, in like manner with us, thunder and lightning, clouds, rain, hail and snow, rivers, mountains, and cultivable soils? Nay, to extend the matter beyond our sphere, I presume there is scarcely any one who doubts that the planets that compose the solar system, as Mercury, Mars, Venus, Jupiter, and Saturn, and all the rest, are filled with beings similar to those of our globe; since like it they evidently move round the sun, which is the source of light and heat to them, turn upon their axis, some at less and others at greater intervals than our earth, have atmospheres, reflect light, some of them have moons, and in so many respects are similarly situated with our globe? And yet all these things rest solely upon analogy. Analogies in many cases are the only ground on which we can rest an opinion, and in cases where we are obliged to enter into important measures, and perform necessary and interesting acts. The physician trusts to it when, after much observation and frequent dissections of human bodies, he concludes that the same component parts are found in the bodies of all human beings, and that the functions performed by them are the same; and when to different men he prescribes the same remedies, which he had before found to effect a cure, or furnish relief to his patients, taking care, at the same time, to limit his practice by a consideration of the various constitutions, temperaments and habits of men. The politician presumes upon it when, availing himself of the lessons collected from induction, he calculates that measures, which have been found salutary or mischievous among one people, will be attended with the same or similar consequences among those for whom it is his province to legislate; the historian depends upon analogy, when he endeavours to trace back effects to their causes in the history of mankind, and develop the great sources of the

decline and fall, or the rise and prosperity of nations; the orator when he draws from his own mind, those considerations of truth and expediency, of duty and interest, by which he expects to influence the minds of other men; the seaman rests upon the evidence of analogy, when he unfurls his sails, and lanches into the deep, under the expectation, that winds will arise to waft him to his port; the husbandman when he sows his seed, upon the presumption that the rains as usual will descend, and the dews fall, and the sun shine and fructify the soil, and cause them to rise, bud, and produce his harvest; the grammarian is frequently constrained to resort to it, in settling the principles of philology, and the judge in establishing and applying the great maxims of jurisprudence. In many of the most important transactions of life, analogy is the only light to guide us; and, although not furnishing one entirely competent to the illumination of our path, is the best we are able to obtain. In any given subject, the more frequent the cases in the reasoning from analogy have been found to hold, the more convincing does it become. Every new instance of its truth, gives additional force to it, until at length by continually repeated examples, there is no longer room left for doubt. After so many renewed dissections of the human body, in all of which the same constituent parts have been found to belong to it, it can now scarcely admit a shadow of doubt that the like would be found in the whole race. The more strict the resemblance also, the stronger still will become the argument. The ancients fell into error when, having never seen the human subject exhibited by the anatomist, they undertook, from a view of those of inferior animals, to extend their conclusions by analogy to the species of men. Here it ought to have been perceived that the analogy is too distant to be trusted.

Whenever, therefore, we reason from what we have seen of the constitution and laws of nature, to what is probable

of that constitution and laws in similar circumstances. This constitutes an argument from analogy. And while it is evident that, for the most part, these analogies do not form a foundation sufficiently solid on which to build a rational confidence, and are better fitted to furnish similitudes to the poet or agreeable sallies to the wit, than materials out of which the philosopher is to construct his theories; yet, in many instances, they may become an instrument of no inconsiderable power, in the confirmation of truth and detection of error. If this method of reasoning furnish us not with an armour strong enough for purposes of attack and invasion, it becomes irresistible as a weapon of defence and protection. In Bishop Butler's analogy of natural and revealed religion, we see a masterly use of this instrument in vindicating from objections the authority of Divine Revelation. If it can be shown, that the same objections which are alleged against the Patriarchal, Mosaic, and Christian Dispensations as proceeding from God, according to the account contained in the scriptures, would apply with equal force against the whole frame and organization of both the physical and moral world, and the Divine administration in them, which almost all allow to proceed from God, surely our religion stands impreguably fortified on this quarter from the attacks of her enemies. With a single example by way of illustration, we dismiss the subject. The scriptures, we are told, cannot be the word of God, because we are there informed, that the Creator ordered Moses to exterminate the nation of the Canaanites, thereby involving the innocent, and even women and children in the same indiscriminate ruin, with its depraved inhabitants. We answer, by way of analogy, that however strange and unaccountable this may seem at first view, it forms no valid objection to the truth and divine authority of the scripture history; since in the works of nature we find similar proceedings of the Supreme Being, who sometimes makes one nation during the purity of its morals, and sim-

plicity of its habits, the instrument by which another, that is effeminate and corrupt, is chastised and overthrown; and even in the physical world, when earthquakes, volcanoes and inundations take place, they destroy alike innocent women and children, and the more vicious part of mankind. Is not the conclusion irresistible, that if it be a sufficient argument to prove that the Bible is not the word of God, that God there is represented as giving a commission to Moses to extirpate the corrupt nation of Canaan, the same mode of reasoning would justify the inference, that he is not the author and governor of the system of moral and physical nature, since we see effects precisely of a piece with that event produced in them?

CHAPTER V.

Demonstrative Reasoning, and Intuitive Certainty.

PASSING from the shadowy regions of conjecture and probability, we next come to those which are illuminated by a clear and full light. As experimental philosophy, which we have admitted, can never amount to absolute demonstration, although, sometimes furnishing an evidence entirely sufficient to satisfy the mind, rests upon our sensitive knowledge, or that knowledge which is derived to us through the senses, so all demonstrative certainty rests ultimately upon intuition. By intuition is meant, that act of the mind by which it perceives the truth of any proposition, as soon as it is propounded, without exertion or examination. It may, I think, be justly regarded as the simplest effort of reason, the great power with which we are endowed by our Creator, for the search and discovery of truth. In matters of experimental knowledge, reason has to derive its materials from experience and observation, and on them alone to ground its conclusions; in matters of demonstration and entire certainty, it grounds them upon intuitive evidence, and its office is to trace the connection of our ideas, or what is the same thing, the habitudes, correspondences, and relations of things. Things equal to the same thing, are equal to one another; if from equal quantities the same quantity be taken, the remainders will be equal. These are said to be intuitive truths, or axioms, because they are at once perceived by the mind, by a single glance of attention, and flash with a light upon it that is irresistible. This world must be the workmanship

of a Divine Contriver; men are accountable to their Creator for their conduct. These are truths also perfectly certain; but, although susceptible of complete proof, their evidence does not so instantaneously force conviction upon the mind, as in the cases before mentioned. They are, on this account, denominated demonstrable truths. The mind has to exert itself, and go in quest of intuitive truths, by which to prove them. The perception of intuitive truths, therefore, may be justly regarded as the first and simplest exercise of reason, while its more complex acts consist in searching out things, that are unknown from those that are known. The most certain of all those truths, with which the human mind is conversant, are those that are intuitive. In tracing this kind of truth, it is, as it appears to me, that the methods of analysis and synthesis, have place in the greatest propriety of language. I know that the greatest philosophers have appropriated the terms also to other branches of science, and others, who have followed them in this track, have not always nicely discriminated between the two modes of investigation, but have used the terms with great confusion and ambiguity, some making that to be the synthetical method, which others have resolved into the analytical. Newton, in his *Opticks*, as quoted by Dr. Johnson in his *Dictionary*, defines the “analysis to consist in making experiments and observations, and in drawing general conclusions from them by induction, and admitting of no objections, but such as are taken from experiments or other certain truths.” The same author makes synthesis to consist in assuming the causes discovered and established as principles, and by them explaining the phenomena proceeding from them, and proving the explanations. According to this illustrious man, then, while we are engaged in the pursuit of science, or the causes of things, by experiment and observation, or what Bacon, as we before showed, calls his *axiomata generalia*, general maxims, we are following the analytical method; but when

we come to assume those causes or general truths, as already ascertained, and undertake to apply them to the solution of other phenomena, we are pursuing the synthetical. This distinction is intelligible, although not exactly suited to the original meaning of the terms, and in its application to practice, likely to give rise to great ambiguity and uncertainty. It will readily be perceived, also, by those who have taken the pains to enter into the full import and extent of lord Bacon's method of induction, that both the analytical and synthetical method, as thus represented by Newton, are included in it. It implies both a full and complete collection of facts by experiment and observation, drawing conclusions from them; and then finally, the application of the principles thus ascertained, to other facts that may arise. To explain the matter by an example—Franklin was, according to Newton, pursuing the analytical method, while making experiments in electricity, by which he discovered, first, the existence of the electric fluid, then its identity with lightning: and he was following the synthetical, when, having proved the existence of such a cause, he explained the phenomena of lightning, meteors, the Aurora Borealis, &c. Perhaps, however, it would serve to give more clearness to our conceptions, and relieve us from all ambiguity in the use of words, than which nothing can be of more importance in philosophy, if the whole of that process of investigation, by which we become the interpreters of nature, or make discoveries in the moral and physical world, should be denominated induction; while the terms analysis and synthesis, are limited to signify those methods, by which we trace the relations of things, and the necessary connexion of our ideas. Analysis, as the etymology of the term indicates, implies the decomposition or loosening asunder, of that which is compound into its simple elements, while synthesis, as its derivation also denotes, expresses directly the contrary process, viz. the composition of what is very complex, out

of a number of simple ingredients. In taking my watch to pieces, and exposing to view the parts of which it is composed in regular succession, I follow the method of analysis; when, on the other hand, I put all its parts together again, and after adjusting them in their places, form them into a complete time-piece, I pursue the method of synthesis. When complex truths, therefore, are resolved into those simple ones, of which they are composed, it is the analytical mode of procedure; but when we advance from the simple to the complex, the synthetical.

In this part of knowledge, it is, if any where, that we should expect the syllogistic art to become useful, in tracing the necessary connexion of our ideas, and the immutable habitudes and relations of things. In the experimental sciences, it is evidently futile, and even positively injurious, as it is apt to lead us too precipitately and incautiously, to establish general principles. In the language of Bacon, in his *novum organum*; *sicut scientiæ quæ nunc habenter, inutiles sunt ad inventionem operum, ita logica quæ nunc habetur, inutilis est ad inventionem scientiarum. Logica quæ in usu est ad errores stabiliendos et figendos valet, potius quam ad inquisitionem veritatis; ut magis damnosa sit quam utilis. Syllogismus ad principia scientiarum non adhibetur, ad media axiomata frustra adhibetur, cum sit subtilitate naturæ longe impar; assensum itaque constringit non res.* After the truth has been ascertained, a syllogism may serve to place it in such an undeniable form, as shall preclude the possibility of doubting it, and silence gainsayers and sceptics; but in that effort of understanding by which truth is investigated, it cannot prove of the smallest advantage, and in fact has nothing to do. Syllogism is intended by its author and his followers, to become an aid to reason, but of what advantage can we imagine were syllogisms to Newton, in his discovery of the theory of gravitation, or Harvey in tracing the circulation of the blood? One of the greatest faults of

Aristotle, is, his continued attempt to apply the rules of this art, even in his natural and moral researches, and this circumstance gives to his deepest inquiries on those topics, the air of a frivolous and quibbling logic. *Primi generis*, says Bacon, *exemplum in Aristotele maximè conspicuum est, qui philosophiam naturalem dialectica sua corruptit.*

It is evident, therefore, that in the pursuits of natural philosophy, in all its branches, whether relative to matter or mind, all of which are admitted to rest only upon probability, and where some suspense of judgment is presupposed, while we are engaged in the prosecution of facts, the art of syllogising is worse than useless, it is absolutely pernicious. It may assist us in dogmatising, but can furnish no aid towards a solution of the phenomena of nature. Nor can it be more useful in those branches of learning, whose province it is to trace the agreement or disagreement of our ideas, or to establish immutable and eternal truths. If there be supposed to be any power or force in a syllogism, as an auxiliary to reason, it lends its reinforcement at too late a period of our contest with truth, to contribute in any degree to our victory. Reason has obtained the mastery, and traced the connexion of ideas, or arrived at the conclusion, before the syllogism furnishes her its support. Take the simplest example that can be conceived, in order to test the force of the syllogistic art, with which learned Sorbonnists have made such a pother in the world; and by the adroit use of which, like expert fencers, they could attack, repel, make and parry strokes, and after they were foiled or completely vanquished, still maintain the contest with zeal unabated, and with chivalry undaunted. Suppose, for example, in the case usually enunciated in the received systems of logic, that we wish to trace the connection between man and accountability, or determine whether man be accountable for his actions. Here the mind sets itself to work, to discover what those considerations are, which render a being such as man

accountable for his conduct. It soon discovers, that in order that he should be justly accountable to his Creator, he must be possessed of reason to enable him to know good and evil, or to distinguish what is virtuous and vicious in human conduct: and also of freedom of choice, to adhere to the one and avoid the other. Perceiving, then, that there enter into the idea of accountableness, both reason and liberty, and at the same time, that these are privileges that belong to mankind, he at once concludes, that men are accountable for their actions. Now let this subject be resumed by the syllogistic art, and it immediately hastens to a general proposition, and then applying that proposition to the race of men, finds that it agrees with them: and thence, from this comparison and perception of agreement, deduces its inference in due form and figure.

Every creature possessed of reason and liberty is accountable for his actions:

Man is a creature possessed of reason and liberty,
Therefore man is accountable for his actions.

Such is the form and substance of a syllogism. Now it may here be asked, of what advantage in this case, is the syllogism? It certainly did not contribute in any degree towards furnishing us with the intermediate ideas, reason and liberty, by the intervention of which, we have been able to trace the connection between man and accountableness. It as certainly did not enable us to perceive, that these properties belonged to mankind. All this preparatory process towards our conclusion was gone through by our reasoning powers, which by an energy with which they are endowed, enable us to trace the agreement, or disagreement of our ideas. After we had arrived at our conclusion, by the interposition of our *medius terminus*, or intermediate ideas, the syllogism simply reduces the whole process to a regular form. Could any thing be more shallow and nugatory than such an art? But it may

be remarked, that our syllogism is not merely useless, as contributing nothing towards the result, but is positively injurious, as it rushes to a general proposition, to obtain its major; every creature possessed of reason and liberty, is accountable for his actions. Hence the justness and force of the observation of Bacon, *assensum constringit non res*. It waits not for the slow progress of reason and experience before it leaps to its conclusions, than which propensity nothing can be more incompatible with the true spirit of philosophy. Hence the syllogistic art will ever be found to minister as successfully to the maintenance of error, as the support of truth. All a rhetorician's rules, says the poet, with the lawless license of his profession, teach nothing but to name his tools. What is thus said of rhetoric, without any aptness of similitude, or justness of application, may be justly applied to logic, except so far as it consists in tracing the progress of the human mind, in the pursuit and acquisition of knowledge. The sum of the whole matter is, that if we wish to become good reasoners, we need not expect to do so by studying the rules of logic, or becoming skilful in the management of syllogisms, but by replenishing our minds with a plentiful stock of intermediate ideas, from observation and reflection; by studying the authors most remarkable for profound thought, and close and accurate investigation; and lastly, by cultivating the habits of reasoning from frequent practice, so as to strengthen and invigorate our natural parts. It seems that Aristotle devoted so much labour to the reducing of syllogistic reasoning to a regular art, in order to refute the sophisms of those philosophers in his time, who were not ashamed to deny any thing; and Mr. Locke, while he decries this method in every other respect, admits that to stop the mouths and silence the objections of sceptics, it may be of some service. And yet it may be asked, of what possible use can the reducing of our thoughts to syllogisms be in convincing an adversary, since if he does not allow the

force of those intermediate ideas or proofs, which we adduce to demonstrate any proposition, he will not be more inclined to it, when we have modelled them into syllogistic form. In the example alleged above, if he did not agree, that every being possessed of reason and liberty is accountable for his actions, would you convince him of man's accountability, by putting it into a syllogism? Surely not. Under every aspect of this matter, therefore, I cannot but conclude with lord Kaimes, that "Aristotle's artificial mode of reasoning, is no less superficial than intricate. The propositions he attempts to prove by syllogism, are all self-evident. Take for example, the following proposition, "that man has the power of self-motion. To prove this he assumes the following maxim, upon which, indeed, every one of his syllogisms is founded, that whatever is true of a number of particulars joined together, holds true of every one separately." Dr. Gillies in animadverting upon this passage of his lordship's works, speaks in the following terms—"It would have been charitable in this acute author, to have pointed out the passage in which Aristotle maintains, that because it is true of a number of particulars joined together, that they are an hundred or a thousand, the same holds true of every one of them separately. It is impossible to restrain indignation at such unmeaning jargon, poured out against the most accurate of all writers." Dr. Gillies here rather ungenerously avails himself of an ambiguous expression of lord Kaimes, to detect a fallacy in his reasoning, when the slightest reflection must have convinced him that his sentiment, when rightly interpreted, is just. He means nothing more in this passage, than what Mr. Locke had before asserted, that in every syllogism there must enter one general proposition, in which something is severally affirmed or denied, of all the particulars that compose a genus, species, or collection of objects, and must of consequence be true of each of those particulars, when separately taken. This is the very founda-

tion, upon which all syllogistic argument rests, and it is not to be denied, that it is as shallow, as the divisions of syllogisms into such a complication of modes and figures, is intricate and obscure. The world is much indebted to Dr. Gillies, for the pains he has taken, and the ability he has discovered, in throwing light upon the writings, and reproducing in an English translation, some of the works of the most obscure of all authors. He has given us access with much less trouble than formerly, to some of the most useful and profound speculations of the Stagyrice; but at the same time the observation cannot be withheld, that from his translation, we can form no conception of the style and peculiar manner of the Greek author. His translation is characterized by a splendour of imagery and parade of expression, altogether unlike his original, and exhibits to our view nothing less than the Hercules of antiquity, decorated with the costume, and assuming the air and graces of modern fashion.

The Dr.'s bold and confident mode of expressing himself, is not a little remarkable. In one place we find him asserting, "it is worthy of remark, that Aristotle did precisely that which he is blamed by Bacon, Hobbes and Mallebranche, for not doing; and declared it impossible to do that which he is blamed for having attempted." In another, "Rapin, and the French philosophers, generally treat the Stagyrice with great unfairness, and speak of his opinions with the greatest ignorance, their accounts of him being disgraced by great inaccuracies." Again. "In one place," says he, "had Mr. Locke known what Aristotle meant by motion, his candour would not have allowed him to speak of this definition as he does." In another, "The intrepid ignorance of Voltaire, might maintain, that Aristotle considered light as a quality merely; and that luminous and coloured bodies, had qualities exactly such as they excited the ideas of in us. But how could the learned Warburton assent to this erroneous ac-

count of the Peripatetick philosophy!" It is not to be doubted, that Aristotle's doctrines have been too generally taken from the schoolmen, his false interpreters; yet we are inclined to think, that if it does not indicate intrepid ignorance, it at any rate requires intrepid pretensions to learning, to speak so confidently in disparagement of the opinions of so many able and illustrious men, and more especially in reference to the works of an author, the most intricate and obscure of all others. And with respect to the last point, in which the learned Warburton is said to have countenanced the opinion of the French philosopher, that Aristotle considers light as a property of bodies, while we really do believe, that the sentiment ascribed to him by Dr. Gillies is correct, viz. that it is a medium by which objects are rendered visible; yet we cannot help remarking, that such is the obscurity of his language, when treating of this subject, that two men, who had embraced opposite views of it, might dispute about the doctrine of the Stagyrice, until doomsday, with all the dexterity of the schoolmen, and at last be unable to decide the controversy.

CHAPTER VI.

Of First Principles, Axioms, and Maxims of Science.

NOTHING would seem more certain, than that every branch of sound science must rest ultimately upon first principles, or propositions, whose truth is either intuitively discerned or previously admitted. This is equally undeniable, whether we prosecute our inquiries, by means of the analytical or synthetical method. If we pursue the synthetical method, in order to give satisfaction to the understanding, we must commence with those simple propositions, whose truth is intuitively perceived or previously allowed, and from these advance by just gradations, until we arrive at the most complex and recondite maxims; if the analytical, we must resolve complicated maxims into those simple propositions, whose truth is self-evident or admitted. In each case, therefore, the effort of our understandings, in order to attain satisfaction, is to arrive at intuitive or undeniable truth. This is a doctrine in which all the best philosophers, from the days of Aristotle, to those of Newton and Locke, with one consent, agree. All the difficulty and doubtfulness, which have been introduced into a subject so extremely simple by the Scottish metaphysicians, has arisen. I am inclined to think, from mere misconception of the principles of Newton and Locke. In explaining the principles of these philosophers, then, on this subject, we think we shall contribute sufficiently to its elucidation.

The term axiom, as it is used in mathematical works, and from these the same meaning of it has been transferred to the other branches of science, implies a theoretical proposition, whose truth is intuitively discerned, or in other words, is so clear and undeniable, that it flashes irresistible conviction upon the understanding. This is the present signification of the term, but I apprehend not the original meaning of the one from which it is derived. The latin word *axioma*, taken from the Greek, and translated axiom or maxim, denotes any truth or principle, which is either intuitive or demonstrable, or founded upon experience, and exactly corresponds to our term maxim as now generally used. Lord Bacon frequently makes use of the terms *axioma* and *axiomata* in his latin treatises; and we are not aware that he could have selected a better term in that language with which to convey his meaning. He always understands by it, some maxim or principle of science established by induction, as in the passages before quoted from him. That the heavenly bodies gravitate towards each other according to settled laws of attraction, and that the rising and falling of the tides in our rivers are caused by the united influence of the sun and moon, are, what lord Bacon would denominate *axiomata generalia* or general maxims of science, and they are derived solely from an induction of facts. The reader will readily perceive, therefore, that there are two different meanings annexed to the term axioms in scientific works; the one in which it is made equivalent to self-evident truths, as in mathematical works; the other in which it is synonymous to maxims or principles of science, in which sense it may or may not be regarded as implying self-evidence, as in the tracts of lord Bacon. Considering this circumstance, the criticisms of professor Stewart upon the use of this term by Sir Isaac Newton, in his *principia* and *optics*, might have been spared. They evidently arose out of a want of a just comprehension of the meaning annexed to it by that philosopher. When

Newton, for instance, gives the name of axioms to his laws of motion, or in the beginning of his optics, prescribes as axioms the following propositions: " that the angles of reflection and refraction lie in the same plane with the angle of incidence; that the angle of reflection is equal to the angle of incidence; that refraction out of a rarer medium is made towards the perpendicular, and such like, it is evident that he could not have considered such propositions as axioms, in the technical meaning of the word in books of mathematics; but merely as equivalent to the term maxims, or principles of science which are undeniable. In this signification of the word, he seems strictly to follow the authority of lord Bacon, whose works he evidently understood, and whose method of philosophizing called induction, it was his province to carry into natural philosophy.

After this explication of the term, we proceed to controversies drawing after them more important consequences.

It has been made a question, whether axioms, self-evident maxims, or first principles, as they are called, lie at the foundation of the sciences. The doctrines of Mr. Locke, on this subject, in our estimation, have been controverted and denied only from being misapprehended. We shall first state them, and then endeavour to show that they are not to be overthrown.

Mr. Locke maintains, that those maxims which are usually received as axioms, as, for example, that whatsoever is, is; it is impossible for the same thing to be and not to be; if equals be taken from equals, the remainder will be equal; which because of the self-evidence that accompanies them, are considered innate, are not innate, but like all our other ideas acquired by experience and reflection.

2dly. He maintains, that these axioms or maxims, which terms he takes as equivalent, have no more self-evidence in them, than many other propositions, not so frequently considered as such.

3dly. He asserts, that these general maxims are not so soon known to the mind, as the particular propositions comprehended under them.

4thly. He maintains, that no science has been built upon such maxims as those above mentioned.

In all these propositions, we contend, that when rightly understood, he has advanced nothing but the truth.

In the first three of these propositions, Dr. Reid agrees with Mr. Locke; but imagines, that he has found an inconsistency in the following passages. In book 4, ch. 2, of his treatise, Mr. Locke says, "There is a part of our knowledge which we call intuitive—In this the mind is at no pains in proving or examining, but perceives the truth as the eye does light, only by being directed towards it. And this kind of knowledge is the clearest and most certain that human nature is capable of. This part of knowledge is irresistible, and like bright sunshine, forces itself immediately to be perceived, as soon as ever the mind turns its view that way." He further observes, "that this intuitive knowledge is necessary to connect all the steps of a demonstration." Upon these two passages, Dr. Reid makes the following observations—"From this I think, it necessarily follows, that in every branch of knowledge we must make use of truths that are intuitively known, in order to deduce from them such as require proof." But I cannot reconcile this with what he says Sect. 8th, of the same chapter. "The necessity of this intuitive knowledge, in every step of scientific or demonstrative reasoning, gave occasion, I imagine, to that mistaken axiom, that all reasoning was *ex præcognitis et præconcessis*, which, how far it is mistaken, I shall have occasion to show more at large, when I come to consider propositions, and particularly those propositions which are called maxims; and to show that it is by a mistake that they are supposed to be the foundation of all our knowledge and reasonings." Dr. Reid imagines, that he has detected an inconsistency be-

tween these two positions of Mr. Locke's work; inasmuch as in the one he asserts, that all our abstract knowledge commences in intuitive certainty, and that intuitive certainty, which like bright sunshine forces itself upon the mind with irresistible light, and moreover that this intuitive certainty must accompany us through all the steps of a demonstration; and in the other, that the maxim is mistaken which supposes all reasoning to be *ex præcognitis et præconcessis*. There is, it is certain, an apparent inconsistency in this representation; but it is merely apparent. Had Dr. Reid attended a little more closely to the meaning of Mr. Locke, as explained by himself in different parts of his works, he would easily have seen this slight difficulty solved, and this apparent inconsistency reconciled. Mr. Locke does not mean to assert, that all our reasonings must not commence in first principles, for this truth he expressly recognises in several parts of his work; but that they do not rest upon what were generally deemed the *præcognita* and *præconcessa* of the schools, and the philosophers with whom he is contending; that is, the maxims, which we have before enumerated, and which, by some, were made the foundations of all science. Hear his very expressions—"The necessity of this intuitive knowledge in every step of scientific or demonstrative reasoning gave occasion, I imagine, to that mistaken axiom, that all reasoning was *ex præcognitis et præconcessis*, which, how far it is mistaken, I shall have occasion to show more at large, when I come to consider propositions and particularly those propositions which are called maxims." Now, look at what he says in his chapter upon maxims, and his drift becomes as clear as day-light. "The rules established in the schools," says he, "in that chapter, that all reasons are *ex præcognitis et præconcessis*, seem to lay the foundation of all other knowledge in these maxims, and to suppose them to be *præcognita*; whereby I think are meant these two things. First, that these axioms are those truths that are first known to the

mind. Secondly, that upon them the other parts of our knowledge depends."

It is evident, therefore, that Mr. Locke does not deny but expressly admit, that first or intuitive truths, are the foundation of all our knowledge; but only that these general maxims, whatever is, is, and the like, are the *præcognita* or *præconcessa* upon which our knowledge is built. He maintains, and with a force of evidence which no philosopher can resist, that these general maxims are not first known to the mind, but rather the particular propositions included under them. For instance, the child would know that the two apples which it had, if both equal to a third, would be equal to each other, long before it knew or felt the force of the general proposition, things equal to the same thing are equal to one another. No one can deny the truth of such a doctrine, who has the slightest acquaintance with the structure and operations of the human mind. This is a branch of Mr. Locke's opinions, which were opposed to those who maintained, that man had originally innate ideas and innate maxims, both of which doctrines he has most successfully exploded.

The next objection of Dr. Reid to Mr. Locke's doctrine on this point is; "that he maintains, no science is or hath been built upon maxims." The Dr. here also does not correctly state the opinion of Mr. Locke. That writer does not maintain, that no science is or hath been built upon maxims or first truths of some kind, but upon such maxims or general truths as those before mentioned; whatever is, is; and it is impossible for the same thing to be and not to be, and the like. "Surely Mr. Locke," continues the Dr., "was not ignorant of geometry, which hath been built upon maxims prefixed to the elements, as far back as we are able to trace it. But though they had not been prefixed, which was a matter of utility rather than necessity, yet it must be granted, that every demonstration in geometry is grounded either upon propositions formerly demonstrated, or upon self-evident prin-

ciples." The Dr. seems to labour under a very great misconception of Mr. Locke's views, or he must have discerned that this writer would have acknowledged with him, the last part of his assertions, "that every demonstration in geometry is grounded either upon propositions formerly demonstrated, or upon self-evident principles," and yet have denied the truth of his first position, "that geometry is built upon those maxims or general propositions prefixed to the Elements of Euclid." It is one thing to maintain, that all the propositions in Euclid are founded upon self-evident truths, which is undeniable; and it is quite a different one to assert, that they are all founded in the postulates and axioms, which he states in the commencement of his treatise, which would not be true. Upon the principles of Mr. Locke, and the more they are understood the more conclusive will they be found, lay aside all the postulates and axioms of Euclid, and the propositions which he demonstrated would be no less clear and satisfactory to the understanding. Nothing can be more certain than this statement of the matter, when rightly apprehended. For example, take any two arbitrary points, as A. and B. at some distance from each other. Now is it not as certain that these two points may be joined together by a right line, as that the first postulate is true, which requires it to be granted, that a straight line may be drawn from any one point to any other point? Does a recurrence to the postulate render the matter any more clear or incontrovertible? The same remark will apply to all the other postulates as well as axioms. Take the first axiom also by way of illustration. When I have shown that two triangles, whose properties I am examining, are each equal to the same square or parallelogram, am I not as sure that they are equal to each other, as when I have recurred to the general maxim in confirmation of this truth, that things equal to the same thing are equal to one another? In a word, is not the certainty, which is found in a particular proposition which is

self-evident, as great as that which accompanies the general? And is not the general proposition, maxim, or axiom, derived from the particular, and not the particular from the general? Of this philosophers at the present day ought scarcely to entertain a doubt. For, as Mr. Locke justly remarks, "in particulars our knowledge begins, and so spreads itself by degrees to generals; though afterwards the mind takes quite a contrary course, and having drawn its knowledge into as general propositions as it can, makes those familiar to its thoughts, and accustoms itself to have recourse to them, as to the standards of truth and falsehood." And here too we may perceive distinctly pointed out the use and advantage of postulates and axioms in mathematical science. If they cannot assist the mind in attaining to the truths of that science, and do not form the basis upon which it rests any more than many other propositions equally evident with themselves, they may be of very great service when rendered familiar to the learner, to be appealed to as the standards of truth and falsehood, and as Mr. Locke observes, to stop the mouths of wranglers, and put an end to controversy. Should any one, for instance, become sceptical and captious enough to deny what is clearly self-evident, an appeal to a general maxim, whose justness and force he had been accustomed to recognise, might bring him to a right perception of the matter, and expose to him the fallacy and absurdity of his objections.

Let it then, be distinctly understood, that Mr. Locke, with all good philosophers admits, that all science must rest upon first principles, or self-evident propositions, or propositions which must be taken for granted, and for which we have no proof, except the light of that evidence, which shines around them.

The first principles, however, upon which he considers all knowledge as founded, are not those general maxims so much spoken of in the schools, but those particular and simple

truths that enter into every subject which we attempt to investigate; and which, instead of being limited to the small number attempted to be enumerated in books are almost numberless. For example, the truths contained in Euclid's Elements of Geometry, although they rest upon intuitive certainty, have no more immediate connection with the axioms and postulates with which he commences his treatise, than with many other propositions equally intuitive with themselves. "Farther, it is evident," says Mr. Locke, book 4, ch. 12, "that it was not the influence of those maxims, which are taken for principles in mathematics, that hath led the masters of that science, into those wonderful discoveries, they have made. Let a man of good parts know all the maxims generally made use of in mathematics never so perfectly, and contemplate their extent and consequences as much as he pleased, he will, by their assistance, I suppose, scarce ever come to know, that the square of the hypotenuse in a right angled triangle, is equal to the squares of the other sides. The knowledge that the whole is equal to all its parts, and if you take equals from equals, the remainder will be equal, &c. helped him not, I presume, to this demonstration. And a man may, I think, pore long enough on these axioms, without ever seeing one jot the more of mathematical truth. They have been discovered by the thoughts otherwise applied; the mind had other objects, other views before it, far different from those maxims, when it first got the knowledge of such kind of truths in mathematics." That is to say, the mind in tracing the agreement and disagreement of its ideas in order to the making of discoveries in mathematics, as for instance, in discovering that the square of the hypotenuse in a right angled triangle is equal to the squares of the other two sides, did not have recourse to any of the axioms or postulates so formally laid down, but followed its natural train of thoughts suited to lead it on to that kind of conclusion, or commencing in those particular propositions suited

to the subject, passed from those which were intuitively certain to those that resulted from them by irresistible inference, until at length it was conducted to the desired result. Thus all the propositions of Euclid may have been proved, as well as the Pythagorean, without the philosopher having once thought of those general propositions, called 'maxims or axioms. Of consequence these axioms cannot be considered as the foundation of mathematical science. The same remarks would apply to all the other branches of science. Are, then, it may be asked, these postulates and axioms in mathematics, and first truths in all the sciences, of no importance? And are they so formally prescribed by philosophers only in empty ostentation?

Mr. Locke distinctly understood, acknowledged, and explained their uses. "They are of use," says he, in his *Treatise on Maxims*, "in the ordinary method of teaching the sciences as far as they are advanced, but of little or no use in advancing them farther. When schools were erected, and sciences had their professors to teach what others had found out, they often made use of maxims: *i. e.* laid down certain propositions which were self-evident, or to be received for true, which being settled in the minds of their scholars, as unquestionable verities, they on occasion made use of, to convince them of truths in particular instances, that were not so familiar to their minds as those general axioms which had before been inculcated to them, and carefully settled in their mind."

2dly. "They are of use in disputes, for the silencing of obstinate wranglers, and bringing those contests to some conclusions. Whether a need of them to that end, came not in, in the following manner, I crave leave to inquire. The schools having made disputation the touchstone of men's abilities, and the criterion of knowledge, adjusted victor to him that kept the field, and he that had the last word, was concluded to have the better of the argument, if not of the cause.

But because by this means there was like to be no decision between skilful combatants, whilst one never failed of a *medius terminus* to prove any proposition, and the other could as constantly, without or with a distinction, deny the major or minor. To prevent as much as could be the running out of disputes into an endless train of syllogisms, certain general propositions, most of them, indeed, self-evident, were introduced into the schools; which, being such as all men allowed and agreed in, were looked on as general measures of truth, and served instead of principles (where the disputants had not laid down any other between them) beyond which there was no going, and which must not be receded from by either side. And thus these maxims getting the name of principles, beyond which men in dispute could not retreat, were by mistake taken to be the originals and sources from whence all knowledge began, and the foundations whereon the sciences were built." This view of the matter recommends itself by its own intrinsic evidence, to the minds of all persons who have studied and understood this subject. How idle after all this, appear the strictures of Dr. Reid upon this part of Mr. Locke's principles? In essay 7, ch. 6, of his *Intellectual and Active Powers*, he says—"Mr. Locke farther says, that maxims are not of use to help men forward in the advancement of the sciences, or new discoveries of yet unknown truth; that Newton, in the discoveries he made in his never enough to be admired book, has not been assisted by the general maxims, whatever is, is; or the whole is greater than a part, or the like. I answer, the first of these is, as was before observed, an identical, trifling proposition of no use in mathematics or any other science. The second is often used by Newton and by all mathematicians, and many demonstrations rest upon it. In general, Newton, as well as all other mathematicians, grounds his demonstrations of mathematical propositions upon the axioms laid down by Euclid, or upon propositions which have before been demonstrated

by help of those axioms. But it deserves to be particularly observed, that Newton, intending in the third book of his *Principia*, to give a more scientific form to the physical part of astronomy, which he had at first composed in a popular form, thought proper to follow the example of Euclid, and to lay down first, in what he calls *regulæ philosophandi*, and in his *phenomena*, the first principles which he assumes in his reasoning. Nothing, therefore, could have been more unluckily adduced by Mr. Locke to support his aversion to first principles than the example of Sir Isaac Newton, who by laying down first principles upon which he reasons, in those parts of natural philosophy which he cultivated, has given a stability to that science which it never had before, and which it will retain to the end of the world." We see in this passage a striking proof, how easy it is to animadvert upon the principles of an author without having taken the pains to understand him, or the subject of which he was treating. We have before shown, that Mr. Locke had not, as here represented, an aversion to first principles, in the true meaning of the term first principles, by which is implied those particular self-evident propositions in which all good reasoning must have its foundation. We have now barely to remark, that, so far from Dr. Reid's stricture being just in this respect, Mr. Locke could not have produced a case more in point than that of the discoveries of Newton. Who that has the slightest acquaintance with the subject could confound his *regulæ philosophandi*, with self-evident propositions, or suppose that his reasonings in the *principia* depend upon them? They are not even self-evident. No more causes of things are to be admitted than are both true and sufficient to explain the phenomena. This is one of his rules of philosophizing, and a very just and profound one it is; but has this any connection with the solution of the phenomena, except that it might facilitate our advance in philosophy, by directing us to proceed in the best and most

expeditious method? Long enough might Newton have received this rule, which he drew immediately from Bacon's precepts, before he would have been led by it to broach his theory of gravitation, and still longer before he would have been supplied with arguments to substantiate it. His rules of philosophizing, instead of being self-evident truths upon which his subsequent demonstrations are grounded, are merely excellent philosophical precepts, by which to regulate his inquiries, deduced from a profound observation of nature, and the clearest views of her structure and operations. They are no more the basis upon which his philosophical speculations are built, than the rules of architecture, by which the artist constructs his edifice, are the foundation of the structure he has reared. The same or similar remarks would apply to the axioms laid down by Newton, of which we have spoken before. By this time, I think, we must perceive that the error in this statement does not lie at the door of Mr. Locke, but upon him who has undertaken to cavil at his principles without going through the trouble of understanding them.

From the foregoing view of the subject, it will be perceived that professor Stewart also, although he seems to think that his opinions on this point, while they depart from those of Dr. Reid, correspond to Mr. Locke's, is entirely mistaken. He has not entered into Mr. Locke's views, and has adopted and held doctrines not only incompatible with them, but in a high degree frivolous and unfounded. His opinion divides itself into two parts. First, although he says with Mr. Locke, that axioms or general self-evident propositions are not the foundations of mathematical science, yet with strange oscitancy of understanding, he maintains that definitions form the foundation of it.

2dly. He says, that "axioms form the vincula which give coherence to our chains of reasoning. A process of logical reasoning has often been likened to a chain supporting a

weight. If this similitude be adopted, the axioms or elemental truths now mentioned, may be compared to the successive concatenations which connect the different links immediately with each other; the principles of our reasoning resemble the hook, or rather the beam from which the whole is suspended." This may be regarded as very flourishing rhetoric, but it is very unsound philosophy. It is strange, that Mr. Stewart should have imagined that in these opinions he coincided, or very nearly coincided with Mr. Locke.

In the first place, as to definitions being the foundation of mathematical science, no conception could be more idle and frivolous. If Mr. Locke denied that axioms as they are generally understood, are the basis of this branch of science, what would he have thought of those who make definitions such? Definitions are divided into two kinds in the treatises of logic, and very justly; into definitions of words, and definitions of things. In the first sense, they are the mere explications of terms, and of course under this view could no more be considered as the basis of our reasoning, than the names of the carpenter's tools form the foundation of his structure.

They are very proper and useful to ascertain our ideas in the commencement of any kind of disquisition, and serve greatly to keep up that clearness of conception and accuracy of thinking, which are so necessary to the successful prosecution of science, and which are so remarkably preserved in mathematics. But what has the definition of a term to do with the discovery of truth, or in tracing the agreement or disagreement of our ideas, except as a method of facilitating our progress in the acquisition of it? And in cases in which we attempt the definitions of things, or giving a description of the properties of things, to enable us to discriminate them from all others, so far from being the foundation of our knowledge, or the propositions upon which our conclusions are built, that it is a very just observation of Mr. Burke, that instead of

commencing our inquiries with definitions, we should rather conclude with them. Thus, Aristotle would, conformably to the principles of his philosophy, have defined the sun to be a luminous body, moving round the earth, which was stationed in the centre. The Copernican system has shown how false a description of the sun such a definition would be, and would more accurately define it to be that luminous body placed in the centre, or nearly in the centre, around which the planets revolve. Here we must understand the true system of philosophy, before we are able to give a good definition of the sun, and of course our definition instead of commencing should terminate our inquiries. Take any mathematical definition, and see whether it can be considered as the ground of important inferences to be deduced from it. Will our definition of a triangle, that it is the space included between three straight lines that cut each, ever lead us on to the conclusion, that the three angles of every triangle, are equal to two right angles? Does it at all enter into the inquiry? Does it form any part of the argument? A man might long enough study all definitions of triangles, circles and squares in mathematics, and ponder over them again and again, before he would arrive at the conclusion, that the square of the hypotenuse in a rectangular triangle, is equal to the sum of the squares of the two sides.

In the second place, when the professor maintains, that axioms form the vincula, or connecting links between the different parts of a chain of reasoning, he is equally mistaken. He seems to think that Mr. Locke is aiming at a similar doctrine, but from this circumstance it appears that he has not understood that writer. According to Mr. Locke, these general maxims or axioms, neither lie at the foundation of truth and knowledge, nor considering a train of reasoning as a chain can they form the links that connect the parts together. They are not at all essential to the structure of sci-

ence, but to carry on the figurative mode of expression, and regarding truth and knowledge as an edifice, if any contest should arise about the construction of the parts; as for instance, whether they were arranged according to just proportions, and upon the true principles of architecture, these general maxims might be appealed to as acknowledged standards, in order to decide the controversy. The true vincula of the chain, would be those particular self-evident propositions that must enter into all reasoning which is conclusive, but not these general axioms or maxims. To put the matter beyond all dispute by an illustration. In the usual mode of proving that in a rectangular triangle, the square of the hypotenuse is equal to the sum of the squares of the other two sides, the square formed upon the hypotenuse is divided by lines into two parallelograms, each of which is proved to be equal to corresponding squares, erected upon the sides including the right angle. Now as the two parallelograms, composing the square, are proved to be equal severally to the smaller squares erected upon the other sides, it is concluded, that when added together they will be equal to the sum of these squares, since the general axiom is not to be denied, that if equals be added to equals the sum will be equal. This is undoubtedly true. But in this case we say, that there was no necessity for a recurrence to the general maxim, to enable the understanding to perceive the justness of the conclusion. For after we have proved that the one parallelogram, into which the larger square is divided, is equal to one of the smaller squares, and the other parallelogram is equal to the other square, the understanding, without any aid from a general principle, goes irresistibly to the conclusion, that if the parallelograms be added together they will be equal to the smaller squares added together, or in other words, the square of the hypotenuse, is equal to the sum of the squares of the other sides. It will here be distinctly perceived, that the progress of the understanding is to arrive at

Axioms, and Maxims of Science.

the conclusion by means of the particular self-evident or axiom, and not by means of the general; and the is only appealed to on account of the authority which is acquired in the mind, from its familiarity with it as the standards of truth. We do not maintain that all must not rest upon axiomatic truth, for this is certain that no science rests upon general, self-evident truths or axioms. The mind, in prosecuting its inquiries in all branches of science, grounds all its conclusions upon the first principles, or particular self-evident propositions, which belong to the subject it is investigating, and these are the sources from which the general maxims are derived, and not the particulars from the generals.

CHAPTER VII.

Testimony a Ground of Human Knowledge

THE third ground of human knowledge is found in the testimony of others. Our philosopher before mentioned, after he had learnt to extend his researches by experience and observation, and to trace the natural connection of his ideas and the immutable relations of things, as soon as he began to mingle in the intercourses of life, would discover, that so short was his own life, and so limited his own experience, he must trust to the reports of others for a large proportion of information, in which he found it necessary to repose confidence. Hence a new source of knowledge is opened to him. Mr. Locke, indeed, would not denominate that information which we obtain in this way knowledge, but divides all our knowledge into the intuitive, sensitive, and demonstrative, or that which we derive from intuition, and is self evident; that which we derive from experience, and rests upon the evidence of the senses; and that which we derive from reasoning, and which is demonstrative. According to him, therefore, we cannot be said in the highest sense of the word, to know what is only conveyed to us by the reports of others; but can be only rationally assured of its truth from unimpeachable testimony. Perhaps, this representation of the matter is just, and this the true signification of the term knowledge, according to its technical and philosophical import; but there is a more enlarged sense of the word, which is the meaning annexed to it, in ordinary discourse, that

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experience, by which we become acquainted with the principles of human nature, the course of events in the physical and moral world, and with the usual conformity of facts, with the reports of witnesses. It is this natural propensity to give credit to the reports of others, added to their want of acquaintance with human nature, and the usual course of events, which is the source, out of which spring the extreme credulity of children and ignorant persons, and the readiness and avidity with which they listen to marvellous tales and the most incredible fictions. Untutored in the laws of nature, they know not when those laws are represented to be violated. As subsequent reflection and observation extend our acquaintance with the objects around us, we soon begin to discover that, although for the most part, mankind according to their understandings and ability, make true reports of those things that are presented to their inspection; yet when impelled by sinister motives, and sometimes from mere wantonness and caprice are capable of deception, dissimulation, or absolute falsehood. We now begin to withhold our assent from those things in which before we should have implicitly confided, to weigh and scrutinize the evidence in each case, to compare the facts related with the course of our own experience, and to yield or refuse our belief according to the degree of probability. We are now to be determined in our judgment by the number and character of the witnesses to facts; by the circumstances that corroborate or invalidate the force of their testimony; by their conformity or nonconformity to what we ourselves have experienced in like cases; by the coherence, or incoherence of the different parts of their narrative; by contradictory testimony, and by all those numberless considerations which enter into things of this kind. In each case, however, we are assured, that of all those events which are embraced in the usual course of nature, there may be ample and satisfactory evidence from testimony. We are all satisfied, more-

over, that it is impossible, in matters depending upon the reports of others, to attain to the same kind of certainty, as that which we obtain from demonstration, intuition, or perception; and yet that these things may be no less convincing to the understanding, than if they were substantiated by those kinds of proof. If we should wait until we arrive at demonstrative or intuitive certainty, before we give our assent to the facts, that there exist at this time such cities as Rome and Constantinople, and that there once lived such men as Cicero and Aristotle, we should forever remain in doubt about these things. And yet are we less certain of these facts, because it is impossible to prove them by strict demonstration?

As far as the testimony of men goes in proof of those facts that might have taken place, according to the usual course of human experience, and the known succession of things, almost all mankind agree as to its sufficiency to prove them. Few persons are so idly sceptical as to entertain any doubts of matters that come recommended to them by the reports of credible witnesses, and which might have taken place conformably to the ordinary course of nature. It is only about miracles, or the violations of the usual course of nature, controversies have been maintained. Mr. Hume has undertaken to prove that no human testimony is sufficient to authenticate a miracle or render it credible. As the subject naturally presents itself in this part of our speculations, we shall undertake to state this celebrated objection against miracles, and from the principles of truth, and grounds of human knowledge, which we have before exhibited, trust we shall find no difficulty in refuting it upon those maxims of science and philosophy, upon which it professes to be founded.

CHAPTER VIII.

Upon Miracles.

“EXPERIENCE, it is said, is our only guide, in reasoning concerning matters of fact. Experience is in some things variable, and in some things uniform. A variable experience gives rise only to probability; an uniform experience amounts to a proof. Our belief or assurance of any fact from the report of eye-witnesses, is derived from no other principle than experience; that is our observation of the veracity of human testimony, or of the usual conformity of facts to the reports of witnesses. But this experience is variable, since mankind sometimes tell us the truth, and at other times, impose upon us by falsehood. Now, our experience of the established laws of nature, is uniform and invariable, since nature never deceives us. In the case, therefore, of a miracle reported by witnesses, which is acknowledged to be a violation of the established laws of nature, there is a contest between two opposite experiences; our experience of the veracity of human testimony, which is variable, and our experience of the established laws of nature, which is invariable. Now, when our variable experience of the veracity of human testimony, which inclines us to the belief of a miracle, is placed in one scale; and our invariable experience of the established laws of nature, which would lead us to reject it, is placed in the other, which scale ought to preponderate? In other words, is it not always more probable, that mankind will impose

upon us by false reports, than that the established laws of nature have been violated?"

This, I conceive, is a true statement, without any abatement of its force, of this celebrated and much vaunted argument, which all the writers who have undertaken to answer it, have agreed in ascribing to Mr. Hume. Into this too ready concession in favour of Mr. Hume, they appear to me to have been incautiously betrayed, by the pompous expressions, with which that author ushers in his claims, assumes to himself the merit of a new invention, and sets off the advantages, which may be expected to result from the application of it. We shall first state his pretensions, and then see if it be not in our power to strip him of his plumes. "I flatter myself," says he, in the commencement of his treatise, "that I have discovered an argument, which, if just, will with the wise and learned, be an everlasting check to all kinds of superstitious delusion, and consequently will be useful as long as the world endures." And when writing to his friend Dr. Campbell, we find the following romantic account of the circumstances under which this hint was suggested to him, by which he seems to expect to perform miracles, while he refuses that power to all other persons.

"It may, perhaps, amuse you to learn the first hint, which suggested to me that argument which you have so strenuously attacked. I was walking in the cloisters of the Jesuit's College of La Flèche, a town in which I passed two years of my youth, and engaged in a conversation with a Jesuit of some parts and learning, who was relating to me, and urging some nonsensical miracle performed in their convent, when I was tempted to dispute against him; and as my head was full of the topics of my *Treatise of Human Nature*, which I was at this time composing, this argument immediately occurred to me, and I thought it very much gruelled my companion; but at last, he observed to me, that it was impossible for that argument to have any solidi-

ty, because it operated equally against the Gospel as the Catholic miracles, which observation I thought proper to admit as a sufficient answer. I believe that you will allow, that the freedom at least of this reasoning makes it somewhat extraordinary, to have been the produce of a convent of Jesuits, though you may think the sophistry of it, savours plainly of the place of its birth."

Such are the pretensions of Mr. Hume. Let us now ascertain, whether they are as unquestionable as he would have us believe. It is evident from his frequent references to the works of Mr. Locke, and more especially, to those which are metaphysical, that he had read the *Treatise upon Human Understanding*, although it is equally certain, that, as was the case with the evidences of christianity, he had never taken the pains completely to understand it. Hear, then, the language of Mr. Locke on this very topic, when treating of the degrees of assent in the last part of his second volume. "Thus far the matter goes easy enough," says Mr. Locke, "and probability upon such grounds carries so much evidence with it, that it naturally determines the judgment, and leaves us as little liberty to believe or disbelieve, as a demonstration does, whether we will know or be ignorant. The difficulty is when testimonies contradict common experience, and the reports of history and witnesses clash with the ordinary course of nature, or with one another; there it is where diligence, attention, and exactness, are required to form a right judgment, and to proportion the assent to the different evidence, and probability of the thing, which rises and falls according as the two foundations of credibility, viz. common observation in like cases, and particular testimonies in that particular instance, favour or contradict it." Here we have both that mystical balance of contradictory evidences, with which Mr. Hume makes such a display, and the substance of that argument by which some are willing to believe he has sapped the foundations of christianity. But

to make the matter still more clear, that this objection was felt and understood by Mr. Locke, hear him proceed in the same chapter. "Though the common experience, and the ordinary course of things, have justly a mighty influence upon the minds of men, to make them give or refuse credit to any thing proposed to their belief; yet there is one case wherein the strangeness of the fact lessens not the assent to a fair testimony given of it. For where such supernatural events are suitable to ends aimed at by him, who has the power to change the course of nature; there, under such circumstances, they may be the fitter to procure belief, by how much more they are beyond, or contrary to ordinary observation. This is the proper case of miracles, which, well attested, do not only find credit themselves, but give it also to other truths which need such confirmation.

From these passages it is evident, that Mr. Locke perceived and stated Mr. Hume's objection in all its force, but with that deep insight into things, which always distinguished him, discerned at the same time, in what manner the argument in favour of miracles might be relieved from it. Mr. Hume stopped short in the objection, and endeavoured with all the subtilty and address, which he could summon to his aid, to set it off to advantage; Mr. Locke with clearer views and deeper penetration perceived, that although the objection is natural and not without its weight, yet a satisfactory answer might be furnished to it; thereby verifying the excellent apothegm of lord Bacon; *certissimum est et experientia comprobatur, leves gustus in philosophia movere fortassè ad atheismum, sed pleniores haustus ad religionem reducere.**

* The reader will perceive, that the only difference between the argument here stated by Mr. Locke, and that of Mr. Hume, consists merely in the artful manner, in which the latter has dressed it off to advantage. They are in substance the same; but Mr. Hume has contrived to render it more imposing, by his mode of exhibiting it. Mr. Locke allows that, a great difficulty which we find in receiving the report of witnesses, lies in that re-

Let us now proceed to answer this celebrated objection, which Mr. Hume has thus purloined from Mr. Locke, and endeavoured to palm upon the world as his own invention; while at the same time he has infused into it all the venom of his own subtilty, and recommended it by all the parade of language, and embellishments of fancy and illustration, of which he was capable. From the account which we have before given of the progress of the human mind, in its advancement in knowledge, and the grounds of our assent to truth, we doubt not, that we shall render the solution of this difficulty, about the proof of miracles from human testimony, extremely easy and completely satisfactory.

In our entrance upon this inquiry, which is undoubtedly of fundamental importance to mankind, we cannot but remark, how little solicitous a professed sceptic is, whether one part of his works coheres with another, and whether opinions hazarded at one time, be in exact coincidence with those he had delivered at another. In this treatise upon miracles, we hear Mr. Hume talking of, "experience giving us assurance of the uniform course of nature," and of "the laws of nature being established, (or rather shown to be established,) by a uniform experience." And yet this is the same writer, who, as we have shown, in his *Treatise of Hu-*

port clashing with the ordinary course of nature; Mr. Hume states, in substance, the same objection; but discovers his utmost skill and adroitness, in representing the evidence of testimony, as always resting upon a variable experience only, while the course of nature is found to be established by an invariable experience. Of course, he concludes, that that evidence which we have of the established laws of nature, which is derived from an invariable experience, must, in all cases, preponderate over that which we derive from the testimony of witnesses, which, at best, can be substantiated only by a variable experience. How far this view of the subject is well founded, we have undertaken to show in the text; but we take this opportunity of endeavouring to illustrate still further, the objection of Mr. Hume, as perhaps, no subject was ever more grossly misunderstood and misrepresented.

man Nature, maintains the atheistical doctrine, that we have no reason to believe that in any case, there is any power in causes to produce their effects, that there is no ground for that universally received maxim, that for every effect there must be a cause, that all we can know from experience in reference to cause and effect, is, that they are objects bearing towards each other the relations of contiguity and conjunction; and finally, that even in regard to these, we have no reason to draw any conclusion beyond our own experience." Now, if after a complete course of observation in regard to the order of nature, we have no reason to draw any inference concerning the past or future, what ground has Mr. Hume for deducing any conclusion from his own experience, in reference to those events which took place in the days of the Apostles, and the early ages of Christianity? Upon his own principles, for aught he can know, at any period before his time, nature may have produced all sorts of monsters, centaurs, giants, pigmies, gorgons, hydras, and chimæras, and have sported herself with the violation of her own laws. If we have no right to reason from our own experience, to what in all probability has taken place in time past, or may take place in future, then, the slightest degree of evidence derived from the testimony of others, and he allows that testimony affords us probability as to matters of fact, should lead us with the blindest credulity, to embrace all the fabulous tales of heathen mythology, as well as the wildest stories of fiction and romance. Into such absurdities and contradictions, are men driven by the wanton spirit of scepticism!

Dr. Campbell, in his answer to Mr. Hume's *Essay upon Miracles*, pays him the very high-wrought and unmerited compliment of remarking, that, "he has not only been much entertained and instructed by his works, but if he possessed any talent for abstract reasoning, he was not a little indebted to what he (Mr. Hume,) had written on human nature,

for the improvement of that talent." He then concludes, in the following terms. "If, therefore, in this tract, I have refuted Mr. Hume's essay, the greater share of the merit is, perhaps, to be ascribed to Mr. Hume himself. The compliment which the Russian monarch, after the famous battle of Pultowa, paid the Swedish generals, when he gave them the honourable appellation of his masters in the art of war, I may with great sincerity pay my acute and ingenious adversary." This it must be admitted is very courteous treatment of the Arch-Atheist, and the inveterate enemy of all religion and morals. What advantage Dr. Campbell could have derived from reading Mr. Hume's *Treatises upon the Principles of Human Nature*, which, as far as we have become acquainted with them, as represented by him, are false, hollow and counterfeit, we cannot imagine; but we certainly must be indulged in thinking that there would have been no difficulty in recommending him to much more able masters in abstract reasoning, in whose school he might have imbibed much more wholesome, and certainly not less profound lessons of instruction, than the author of the *Treatise of Human Nature*. Must he pass by Bacon, Locke, Clarke, Chillingworth, Barrow, Stillingfleet, Butler, Warburton, and a host of others of similar pretensions, in whose presence Mr. Hume twinkles but as a dim star, in the midst of so many suns, to obtain his views of human nature, and cultivate his powers of abstract reasoning from the great perverter, and falsifier of reason? Could he not have obtained from these champions of the truth, much more invincible arms with which to subdue an enemy to the faith, than those with which he was furnished by that enemy himself? To hold such language is certainly one of the best expedients, by which to give currency, and authority too, to the most pernicious productions that ever issued from the press in any age or country. The compliment too, as I have said, is as unmerited as it is far-fetched and over-strained. There is not a

single treatise of Mr. Hume, which his warmest friends and admirers, if they have just conceptions of such matters, could consider as a master-piece of abstract reasoning. Where is it? Which of his works deserves that praise? His merits as an historian, although even in this respect his fidelity and accuracy have been impeached, I am willing to admit; and to this I might add, that he sometimes discovers considerable acuteness and erudition as a critick, and polite scholar. But his claims to distinction and superiority, as a metaphysician or profound reasoner, I utterly deny. His logic is obscured and enfeebled by subtilty, his notions of metaphysicks are crude and unconcocted, a vein of cold and deadly scepticism pervades all his writings, together with the most abandoned profligacy of moral principles. Is this the author from whose works alone, a Christian Theologian could derive the weapons with which to subdue him?

But to pass from a discussion of the character and pretensions of Mr. Hume, let us proceed to the consideration of his objection to miracles. Never surely has any subject been more egregiously misconceived and misrepresented. Passing by all minor considerations, such as the ambiguous use of words with which this author is so frequently chargeable, and the inconsistencies with himself in which he has been detected in this essay, I shall enter immediately upon that objection, which every rational mind will perceive to be by no means destitute of force, and which of consequence, it is important to obviate. The whole force of the objection which has been so largely dilated upon by Mr. Hume, may be collected into a single point, and consists in this. Should we ever place such confidence in the veracity of human testimony, of which we can be assured only by a variable experience, since men sometimes tell truth, and sometimes falsehood, as to believe in a miracle, which is a violation of the laws of nature; when by an uniform and invariable experience, we know that those laws are established? In other

words, will it not forever remain more probable that men should impose upon us by falsehood, than that the laws of nature should be violated? This is the pith and substance of the argument, and we trust we shall be able completely to refute it upon those principles of science and philosophy before stated.

It is to be observed, that with the error contained in this argument, there is also an admixture of truth, and that it is this ingredient in the mixture which renders it so palatable to some men, and so likely to impose upon the understanding. Error would gain no credit or countenance among the virtuous and reflecting part of mankind, unless she assumed the semblance, and wore the habiliments of truth; and her form becomes still more imposing and deceptive, when their resembling features are so intimately blended together, that it is difficult to mark the lines or unfold the lineaments that distinguish them. Let us now, with all imaginable candour, proceed to weigh this objection against miracles in the scales of a just philosophy, ascertain its true force, how far the rule proposed for testing the truth of miracles will properly extend, when it ceases to be a just criterion of their authenticity; and determine if possible, that degree of evidence in human testimony upon which, in such instances, a rational mind ought to repose with full and entire confidence.

As the contest here lies between the evidence of experience, and that of testimony, or as Mr. Hume represents it of two kinds of experience, viz: that which we have of the established order of nature, and that which we have of the veracity of human testimony; let us endeavour in the first place, accurately to determine the weight of these two kinds of evidence, so that we may be able fairly to balance them against each other, and see in what cases the one or the other ought to preponderate. First, let us speak of the evidence of experience. When it is alleged that from uniform experience we derive proof that the order of nature is estab-

lished, we enunciate a true proposition; but we must carefully note, in this case, what is implied in the term proof. We have before shown that all that portion of our information which we properly denominate knowledge, may be divided into intuitive, sensitive and demonstrative. Now it will not be contended that, either from intuition, or demonstration we derive proof, that that portion of the past or future course of nature which falls not under our own observation, has been, or will be, the same as we have always found it. There are no lights with which we are furnished, either by nature or philosophy, which will enable us to determine with any thing like demonstrative or undoubted certainty, that any portion of the past course of nature, of which we were not ourselves witnesses, was like that which has fallen under our own observation, or that any portion of the future will be like it. The inhabitants of Lisbon and the Caraccas, as we before remarked, remained in as perfect security that the order of nature was established, and that the ground would remain stable beneath their feet, but a moment before they were swallowed by an earthquake, as they had done for centuries before. And here we see their uniform experience deceived them. There are no principles of science, at this time in possession of the philosophick world, by which we could prove that at any moment from the one on which we touch, the whole frame of the solar system may not have its springs unloosed, and sink to ruin. From this view of the subject, which we venture to assume as founded in the deepest philosophy, it will be perceived, that all the proof, which we can derive from the most invariable experience of the past course of nature, can amount at best to only strong and satisfactory probability. If we could arrive at what might be called knowledge, or demonstrative proof, that the past has always been like the present, the argument would be brought to a summary conclusion, and Mr. Hume's objection obtain a speedy and complete triumph. But this can

never be done by the feeble and limited faculties of man. But have we not sufficient reason to believe from our own experience, that the past course of nature has been invariably like the present? If we had no evidence presented to us of the contrary, and supposing ourselves reasoning from the unaided lights of our own minds, we should certainly say that we have. We entertain no doubt, although we cannot prove it, and know that it rests upon probable evidence only, that the sun has risen and set, from the beginning of the world as it does now; that the Earth has rolled round that luminary, and the tides risen and fallen in regular succession. And had we no proof to the contrary, we should say, from the exercise of our own powers, that the same had taken place in all the other departments and laws of nature. While we are propelled by a regard to truth, and the principles of science, to make this concession to our adversary, in order to come immediately to the point in controversy, the question may be asked; since it is admitted that the evidence which we derive from experience, that the order of nature has always been the same, supposing that no proof were alleged to the contrary, would amount to strong and satisfactory probability, is there any evidence which can be derived from human testimony which should overcome this probability, and lead us to conclude, that in any cases whatever the laws of nature have been violated? As the two kinds of evidence, that derived from experience, and that from testimony, which are *sui generis*, distinct from each other, are here attempted to be poised the one against the other; the intelligent reader will perceive, that the subjects not being homogeneous, it will be extremely difficult to determine by a test of this nature, what degree of weight should be respectively assigned to them, and how far the one may preponderate over the other. This observation has been made by Dr. Campbell. Where the subjects are homogeneous to each other, it would be a fair mode of reason-

ing, and consistent with the true spirit of the Baconian philosophy, to allow the judgment to be determined by the more frequent experiences we have had of the fact. For example, to give the instance adduced by Dr. Campbell, suppose a ferry-boat to have passed a river in safety, thousands of times within our knowledge, and but once or twice had been known by any accident to be carried down the stream, and the passengers drowned. Here the very frequent instances of the safe passage of the boat, and the very rare ones in which it had been subject to any unpleasant accident, would, when the first were weighed against the last, render the probability so strong, that they would pass in safety as to awake no apprehensions in the minds of the passengers. But suppose that, instead of the boat being carried down the stream, and all persons on board having been lost twice out of thousands of times, this fatal accident should have taken place every fourth or fifth time, would not every person on board feel extreme anxiety, and be in painful doubt of his fate? In cases of this kind, where the subjects compared are homogeneous, or alike in nature to each other, the rule of Mr. Hume, by which experience is weighed against experience, would be a good one, and the result would afford a tolerable calculation of chances in favour, or against us. But by what process shall we be able to balance the evidence of testimony against that of experience in a similar mode? It is evident to the most superficial thinker, that although the above mentioned ferry-boat had within our experience, passed the river in safety thousands of times, and never been known to be subjected to any disaster, yet the testimony of any one man in whose veracity we confided, would overturn the evidence of all past experience, and lead us to believe in the fact without doubt or hesitation. Of this statement of the matter no rational mind can doubt. At the same time, to pursue the argument with the same candour, and impartial regard to truth with which we commenced it, if the question

were asked, how we come, from the testimony of a single witness, to believe in a fact that contradicts all our former experience in the matter, our answer would undoubtedly be that, although the loss of the boat and passengers, was contrary to all our former experience in this case, yet it was not contrary to our former experience of the ordinary course of nature in similar cases. We know that boats are liable to be borne down the stream, and the passengers to be drowned. We have, perhaps, been witnesses of similar casualties. The agents producing these results exist in nature. The ready assent, therefore, which we should give to a fact of this kind, would not depend solely upon our confidence in the veracity of the relator, but also upon our previous knowledge of the constitution and laws of nature. On this account it is, I am inclined to think, that while the example adduced by Dr. Campbell goes conclusively to show, that the two kinds of evidence, that of testimony, and that of experience, being heterogeneous, cannot be well balanced against each other, until, by a sort of metaphysical reduction, we shall be able to bring all kinds of proof to a similar denomination; yet that by the answer he has given to Mr. Hume, when he refers to the case of the ferry-boat, he has not reached the very heart and marrow of the argument. The passages and losses of the ferry-boat and passengers, are all events acknowledged to come within the compass of the ordinary laws of nature; while the case of a miracle is admitted to be a suspension or violation of those laws. To illustrate the case by an example in point. Suppose, in passing to this same river, we had met the same man whose integrity was known to us, and instead of informing us that the ferry-boat had been carried down the stream, which we should believe upon his word without a moment's hesitation, he should give us intelligence, that he had just returned from witnessing a most extraordinary scene, that of a Being who had raised a man from the grave, after he had been dead

four days, and was in a state of putrefaction. Should we now yield assent to the truth of his story, however confident we might have felt before of the integrity and veracity of the narrator? Certainly not. We should require much stronger evidence, than the testimony of any man, to convince us of such a miraculous fact. Here, then, we are truly brought to the point at issue.

Is there any evidence which can be derived from human testimony, the veracity of which must always rest upon a variable experience, that can so far vanquish our confidence in the established laws of nature, as to lead us to give credit to a miracle, which is a violation of them?

We have before remarked with Dr. Campbell, that as the evidence of testimony, and that of experience are not homogeneous to each other, it is impossible in many, or even most cases, to reduce them to a common standard, and by placing them in the same scales determine which will overbalance the other; or in other words, decide what quantum of testimony will be able to outweigh a given portion of experience, and vice versa. Notwithstanding this difficulty, however, which meets us in coming to settled and determinate conclusions in these matters, and which, in all probability, will forever preclude the possibility of our being able nicely to graduate a scale, by which the force of these two kinds of evidence shall be ascertained; yet, there is one consideration which makes us some amends for our deficiency in this respect, and that is this, viz. that we are able, I think, with tolerable certainty to decide, what degree of evidence ought to be regarded by every rational mind, as inadequate to the proof of a miracle, and what degree should be considered adequate.

In the first place, then, to hasten forwards in the prosecution of our inquiry, we are willing to admit that a miracle can never be sufficiently substantiated by the simple testimony of any man or any ordinary set of men. By simple

testimony, I mean testimony which is uncorroborated by any other circumstances or proofs, but the attestation of the parties concerned; and by any ordinary set of men, I would be understood to signify a number of persons selected from the bulk of mankind without choice or discrimination. I say, then, I am willing to admit, that a miracle can never be considered as substantiated by the simple testimony of any man, or any ordinary set of men. Let us now compare this concession with the statement of that argument usually ascribed to Mr. Hume, and it will be readily perceived that we have allowed its full force, as far as it can be legitimately extended. The substance of that objection is, that we should never allow our confidence in human testimony, of the veracity of which we can be assured only by a variable experience, to lead us to believe in a violation of the established order of nature, of which we are assured by an invariable experience. Now this objection invalidates that kind of testimony, of the veracity of which we have had proof only from a variable experience, that is, simple and uncorroborated testimony. We have had, it is alleged, only a variable experience of the veracity of human testimony, since men sometimes tell us truth, and at other times impose upon us by falsehood. It is evident, this could be justly asserted only of the bulk of mankind, with whom we casually meet in the intercourses of life. Add to this general proposition some of those circumstances of corroboration to which I have alluded, and the maxim has no longer its force or justness of application. It is certain that, when we speak generally of mankind, the proof which we have of the veracity of their testimony rests only on a variable experience; but have we a like variable experience of the veracity of good men, or of men who have afforded us all the outward and inward demonstrations of unsullied purity, and excellence of character? Is it by a variable experience only, we are assured, that men who have given every pos-

sible proof of probity, will not suddenly change their religion, shake off all their early prejudices and prepossessions, embrace the tenets, and enlist as the champions of a new faith, in order to become the propagators of a string of falsehoods? Is it by a variable experience only, we are assured, that men of undoubted probity will not, after they have relinquished their own religion and embraced a falsehood, to promulgate that falsehood, relinquish all the sweets of home and a peaceful life, and voluntarily encounter hardships, toils, ignominy, perils, persecutions, and even persevere unto death in attesting it? Is it by a variable experience only, we are convinced, that those men could not have been impostors, and the propagators of a string of falsehoods, who not only changed their religion and all their views, and habits of thinking and acting, and subjected themselves to all kinds of sufferings and death, from attachment to their new faith; but who, by some wonderful influence, induced hosts of others to make the same sacrifices as themselves; made converts of all nations; without power, wealth or influence, effected a complete moral change in the world; planted the standard of the cross, upon the ruins of paganism and idolatry; and in spite of the most furious opposition of Jews and Gentiles, backed by the whole force of civil and ecclesiastical power, made their way triumphantly through the earth? In fine, is it by a variable experience only, we are assured, that these men could not have been deceivers, who not only deserted their own faith, and embraced another, spent their lives in suffering, and died the most painful deaths in promulging the tenets of the last, made converts of a host of others of all ranks and conditions; but who also had the address and good fortune, to have the great events of their lives annually celebrated by a succession of followers from their times to the present, and monuments erected to perpetuate the remembrance of them?

Under such circumstances as these, can it be said with any show of reason, or rather without an outrage upon the principles of right reason, that of the veracity of the testimony furnished by the first promulgers of christianity in favour of those miracles by which it is supported, we have only a variable experience? Would human testimony, when thus corroborated by circumstances and facts, be liable to any exception; or subject even to the chance of error or imposition? Would courts of justice admit, that they have only a variable experience of the veracity of testimony, which is offered to them by men of unblemished reputation, and acknowledged probity and good sense? Do they not feel themselves perfectly secure, in resting upon the ground of such evidence, those decisions that effect the fortunes and lives of their fellow creatures? How much stronger, then, would be the case, if to the single circumstance of acknowledged probity in the character of the witnesses, we add those important considerations to which I have before alluded, their change of religious habits and views of things, the privations and difficulties they encountered in promulging the doctrines of their new faith, the horrid deaths which they calmly and triumphantly underwent, the wonderful success of their ministry, and to crown the whole, the institutions founded upon the great events of their lives, and the monuments erected to perpetuate them? Here then, from this view of the subject, we have unexpectedly arrived at a conclusion, which allows us to admit the whole force of Mr. Hume's argument, when rightly understood and justly applied, and yet open no door by which any danger can be introduced to the christian religion. He avers, that no human testimony can establish a miracle, because of the veracity of human testimony we are assured only by a variable experience, and we have an invariable experience against a miracle. We avow, and think we have now proved that, in the

case of christianity, we have a testimony in favour of its miracles, not resting upon a variable, but invariable experience.

We can be liable to no possible deception in the case. The accumulated evidence which is afforded us in this matter, is stronger and more conclusive, than any evidence which we can derive from our own experience, of what may have been the past course of nature; and we should, upon better principles of reason, admit any the most stupendous violations of the established laws of the physical world, than allow a testimony so corroborated by circumstances and facts to be false. The thinness and impalpable nature of the whole frame and constitution of the moral world, render it extremely difficult to determine with precision and accuracy, at what points its regular and ordinary laws cease their operation, and the violations or suspensions of them commence. But, on this subject, we may, I think, arrive at tolerable certainty, that to suppose all this compound and strongly corroborated testimony, in favour of the gospel miracles to be false, would be to suppose as great a violation of the established laws of the moral world, as to admit its veracity, is to allow the violations of the established laws of the physical world. So that upon this view of the subject, we know not that any detriment could result to christianity, if the truth of Mr. Hume's maxim were admitted in its utmost extent, as before we have admitted it, as far as it is grounded in reason and philosophy, viz. that we should never believe a miracle, unless it would be as great a miracle, that the evidence which supports it should be false, as that the fact itself should be true. It would be as great a departure from the ordinary laws of the moral world, that such a stupendous imposture as christianity must be, if it be false, should have been embraced, propagated, and palmed upon the world as a system of divine truth, in the manner in which

it was done; as it was a departure from the ordinary laws of the physical world, that all the miraculous works recorded in the gospel, should have been performed. In this view of the subject, however, it is proper for us to remark, we do not acquiesce. We do not agree that this is a proper, and the only test of a miracle.

Let us now see, whether the principles we have stated, are conformable to the views of Christ and his Apostles, as disclosed to us in the sacred scriptures. We have admitted, in treating of the subject, that no miracle can be sufficiently authenticated, by the simple testimony of any witness, or any ordinary number of witnesses. There can scarcely remain a doubt, that there is a natural and well founded prejudice, existing in the mind of every intelligent man against marvellous stories, that cannot be overcome, and should not be overcome, when they become so serious as to be miraculous, by such slight evidence, as the mere declaration of any individual, or a few individuals. The conduct of the king of Siam was very natural, who refused to believe the report of the Dutch ambassador, when he informed him that in Europe, water could become so hard by the influence of cold, as to sustain upon its surface a loaded wagon. He followed the dictates of nature, in refusing his assent in this instance, as he had never seen water in any other condition than a fluid state, and supposed it impossible, so to change its consistence as to make it hard; but in this business he did not act the part of the philosopher. He ought to have known that experience and observation, alone, can give us information of the effects, which the different agents in nature produce upon each other; and until he had tried the operation of the utmost influence of cold upon water, he could come to no probable conclusion about it. That we do, however, naturally and properly make our own experience, in a degree, a criterion or standard, by which we judge of the probability or improbability of the tales related by others;

we have just seen acknowledged by Mr. Locke, and of the fact there cannot be a shadow of doubt. Even the credulity of children, and the most ignorant persons may be shocked by stories too improbable, or contrary to experience to be credited. Suppose, then, a man should present himself to us, at this time, alleging that he had been connected with a being, who had performed miracles, who had raised the dead, cured the sick by his word, controlled the winds and waves, fed thousands of a hungry multitude with a few loaves and fishes, should we give credit to his simple testimony? Undoubtedly no rational person would. The answer to him, in such case, would be entirely satisfactory, we have proof from our uniform experience of the established order of nature, and we shall not believe that it has been violated at your word, of whose veracity the probability can never be so strong, as that derived from our own invariable experience. No apparent sincerity or earnestness of asseveration on his part, would ever persuade us, or should ever persuade us, that he was not either deceived himself, or attempting to practice an imposition upon us. Thus far we readily admit the conclusive force of this argument, and yield our understandings willing captives to its influence. But, in reference to the miracles ascribed to Christ and his Apostles, does this objection go, in the smallest degree, to the falsification of them? Was there ever a time, in which the truth of these miracles, rested solely upon the simple testimony of men? When Numa, following the example of other lawgivers, in order to give authority to his laws, pretended that he received them from the goddess Egeria, and Mahomet declared that the Koran was communicated to him by successive revelations from the angel Gabriel; these men rested the truth of their pretensions upon their own declarations; and upon this proof alone no rational mind, not blinded by ignorance and superstition, could have reposed confidence. But the course of the Divine Founder of the Christian faith,

presents us with a fine contrast to such flimsy pretences. He, indeed, laid claim to a divine mission, and had any objector, such as those with whom we have to contend, been present and put to him the interrogatory, how can you prove to us, that you have been thus supernaturally endowed? To admit that God has thus interposed in your behalf, would be to allow a miracle or violation of the laws of nature. Now, is it not much more probable, that you should impose upon us by a false declaration, than that the established laws of nature should be violated? We doubt not, that the great author of our religion, would have felt and acknowledged the force of the objection. He has felt and explicitly acknowledged the force of the objection, when in some conversations with his disciples and hearers, he declared, "if I bear witness of myself, my witness is not true," and again, "if ye believe not me, (that is upon my simple declaration,) believe me for my work's sake." Here we perceive the true ground, upon which Christ, during his own life, rested his claims to a divine mission. He was not contented, as were the ancient lawgivers, and the impostor Mahomet, with simply declaring his heavenly mission, but made the appeal to the evidence of their senses, those very senses from which they derived their knowledge of the uniform laws of nature. Here was a criterion that was infallible, and could not mislead them.

Thus we perceive, that our holy religion in its outset, did not rest its pretensions upon the simple declarations of its author. Nor after his death, did his successors the Apostles, who became the promulgers of his system of faith and doctrine, repose their claims to the confidence of their fellow-men, upon their own testimony. As if anticipating an objection like that with which we are now combatting, they renewed the miracles which their Lord had performed, and thus by continuing the appeal to the senses, silenced all opposition from this quarter. Hence the necessity of the per-

formance of miracles by the Apostles. And even in the third and last stage of evidence in this matter, in the days immediately succeeding the Apostles, we find christianity, instead of grounding its pretensions to truth and divine authority upon the simple testimony of its professors, reposing itself in safety upon all that accumulated evidence in its confirmation, which we derive from the character and conduct of its propagators; from their unblemished purity of intention, and uprightness of conduct; from their relinquishing all the comforts and satisfactions of life, to devote themselves to perpetual toils, hardships, imprisonments, dangers and death; from the wonderful success of their exertions, and their triumphant progress in the promulgation of the faith, in the midst of difficulties, which appeared insurmountable. But besides all these considerations usually urged in this case, we find at this period of the church, a moral phenomenon presented to our inspection, for which no rational solution can be furnished, but the prevailing influence of miraculous power. A large proportion of mankind have, from some cause or other, been induced to abandon the religion in which they had been educated, and in opposition to all those motives, which generally operate most powerfully upon the minds of men, to become christians.

The fact is, that besides all this proof which may be exhibited in favour of christianity, and which every unprejudiced mind must deem satisfactory, there is another of a peculiar nature, and which of itself, would frustrate the force of Mr. Hume's objection. We are in the habit of considering intuition, experience, and testimony, as the three distinct grounds of human knowledge, and undoubtedly they are so; intuition being the ground of demonstrative certainty, experience the ground of natural and moral science, and testimony that of historical information. Science knows no other distinctions but these. But at the same time, is it not worthy of remark, that there is a kind of knowledge which we

possess, that is not derived from what we properly call experience, and yet does not depend for its certainty upon testimony alone, but partakes of the force of both, and may be regarded as a compound mixture, composed of both these ingredients? Such facts, for example, as the following; that there were once such republics as those of Athens and Lacedæmon, such an empire as the Roman, and that such men as Aristotle, Plato, Cicero, and Cato, once lived in them, cannot be justly considered as resting solely upon the testimony of the Greek and Roman writers. Have we not the productions of their genius, and their monuments of art remaining? We can visit the capitals of Greece and Rome, and find the accounts of their philosophers, historians, orators, and poets, confirmed by the venerable ruins still to be perceived of their ancient grandeur. Have we not here a proof of the former existence of these nations, and that such illustrious men once adorned them, as we have above enumerated, much stronger than that which can be derived from mere testimony, and which if it cannot be regarded as amounting to our own experience, very nearly approximates to it? If all the monuments of the ancient greatness of these nations, could be supposed so completely erased, as that not a vestige of them was to be seen, the evidence of these facts would be totally changed, and there might be found some better excuse, than is to be discerned at present, for the opinion of Father Harduin, that almost all the classics are the supposititious productions of the middle ages. To illustrate our meaning by reference to a case exactly in point. Plato informs us in his *Timæus* and *Critias*, that when Solon was in Egypt, into which country he went in pursuit of knowledge, as was the custom among the philosophers of Greece, the Egyptian priests informed him, that the Greeks were as yet but children in matters of antiquity, for that at a period long anterior to that to which their records extended back their history, there lived a great and flourishing nation, in-

habiting an island called Atlantis, beyond the pillars of Hercules, the present straits of Gibraltar; that this island was connected with other islands in the Atlantic ocean, and these with a large continent; and that this powerful nation passed over into Africa and Europe, and conquered the greater part of them. Now this whole account of the island Atlantis, and the powerful nation of the Atlantidæ, may be considered as described by Plato, as resting upon the simple testimony of the Egyptian priests. But suppose an island and a continent, of the kind mentioned above, had been discovered by modern navigators in the Atlantic ocean, inhabited by a people tracing their origin to a great and powerful nation, from whom they professed to derive their improvements, usages, laws, and institutions; that the remains of their ancient glory were still perceptible in their cities, temples, and other specimens of architecture, sculpture, and painting; would not such circumstances strongly confirm the truth of this Egyptian story, and, in fact, render credible what at present, is justly regarded only as a romantic and fabulous tale? Take this mode of reasoning, and apply it to the case of christianity. Have we not undoubted proof that Moses and Christ once lived, and performed the actions which are ascribed to them in the circumstances, that from the very times in which they lived, there has been a continued succession of men, who have submitted to their laws, and professed themselves their followers; that great and mighty empires have been erected on the foundations which they laid; that the monuments of these empires are still existing, and that institutions arising out of the great events of their lives, continue to be observed in sacred commemoration of them? When the whole of this species of evidence is classed under the general appellation historical, it is certainly throwing into one confused heap, things which, if not discrepant from each other in kind, are certainly greatly discrepant in their degree of force. Science, indeed, furnishes us with no term

to designate this degree of proof, by which important facts and events may be authenticated, but its superior weight and influence upon the understanding, are no less perceptible on that account. The evidence which we derive from considerations of this kind, when taken in connection with the other proofs of christianity to which we have before alluded, affords a clear, intense, and irresistible light, which cannot fail to flash conviction upon every unprejudiced mind. Under this view of the subject, and in the full possession of such satisfactory proof, what shall we say of that bold, though unfounded declaration of Mr. Volney, in a work very descriptively and characteristically entitled his *Ruins*, as it may emphatically be styled a chaos of follies, fantasies, and absurdities; “that there are absolutely no other monuments of the existence of Jesus Christ as a human being, than a passage in Josephus, a single phrase in Tacitus and the gospels; and that the existence of Jesus is no better proved, than that of Osiris and Hercules, and that of Fo or Bedou.”

Is there any extravagance of opinion or impudence of assertion, of which the impugnors of the gospel are not capable, when it happens to suit their purpose at the time, and more especially, when the prospect is presented to them, by the boldness of their assumptions, to dupe the ignorant and ensnare the unsuspecting? It is impossible that Mr. Volney could have been ignorant of the egregious mistatement, and even palpable fallacy of a declaration of this kind. After the view which we have already taken of the subject, it is certainly unnecessary to enter into the refutation of an assumption so glaringly unfounded, as the answer to it must by this time be obvious to the reader. The same view of the matter which we have exhibited above, serves also, as we have asserted, completely to sap the force, and defeat the purpose of the much vaunted argument ascribed to Mr. Hume, although, as we have already shown, he was not entitled to the merit of inventing it. Even supposing his reasoning upon

the point to be conclusive, and we have proved, we trust, by unanswerable arguments it is not, it would not accomplish the object he had in view. The fact, that the miracles of Christ and his Apostles were performed, rests not solely upon the testimony of the Apostles and Evangelists, unimpeachable as it is, and corroborated as it is moreover, by circumstances that render it satisfactory. It is written in deep and legible characters, if I may speak so, upon the moral order of the world. Effects were produced at that time, by the miracles of Christ and his Apostles, of which such extraordinary acts alone could have been the adequate cause. The more remote results of them are discernible at the present day.

Thus we have endeavoured to refute this celebrated argument against miracles, to separate what is true from what is false in it, and to show that when properly understood, instead of proving of any detriment to the interests of our holy religion, it is rather a confirmation of its truth; since after a scrutiny of this kind, it is found impregnable also upon this quarter, in which it at first appeared to be most vulnerable. We shall conclude the subject by a few brief observations, in the form of scholia, connected with the foregoing investigation.

In the first place, it will be an abuse of the doctrine we have held on this subject, if it should be said, that we regard every miracle as incredible, which has not been substantiated by such proof as that which we have required above. When we have obtained in the manner described, sufficient evidence of the interference of God as the conductor of any dispensation, as that of the Jewish or Christian, every insulated miracle which may be exhibited, will not require the same evidence to prove it, as was necessary in the first instance, to establish that important fact; as after we have conclusively deduced from an examination of some of the most important parts of the works of the Creator, the existence of

a contriver, we readily refer the less important portions of creation to the same original. Under this description, would be included many of the insulated miracles, both of the Old and New Testament. When Moses and Christ had established their claims to a divine commission, and we are convinced of the validity of those claims, our belief in such miraculous interferences becomes easy.

Secondly. As Mr. Hume promised himself, that he had discovered an argument which would put an everlasting check to all kinds of superstitious delusion, under which he no doubt included Judaism and Christianity, we think we may avail ourselves of the principles we have prescribed, to put an end to superstitious delusion, without having an ill aspect upon the system of our holy religion. Before we believe any miracles in future, let us put them to the same test, which we have seen the scripture miracles so well sustain, and if they can bear it we will receive them. I need scarcely remark, that so severe a test as this will at once exclude the pretensions of all those impostors who have attempted thus to trifle with the interests of mankind, commencing with Simon Magus, and continuing down through the whole line of his successors to the present day. This view of the subject, renders an object of ridicule rather than serious consideration, those stories of a blind man cured by the emperor Vespasian in Egypt; and that of a lame one cured at Saragossa, as related by the cardinal De Retz, as well as the tales of the cures, which were said to be performed at the tomb of the Abbè de Paris. These accounts, under this philosophical view of the subject, are too frivolous to be rendered worthy of a serious discussion; and could have been brought forward, and considered by Mr. Hume in connexion with the scripture miracles, only from the mere wantonness of opposition, and pruriency of debate.

Finally: If the fact be established, that miracles were performed by Christ and his Apostles, the infallibility of their

doctrines results by necessary consequence. Knowledge is power, says lord Bacon. And with equal justness and propriety, we may reverse the maxim, and declare that the existence of extraordinary power, indicates the possession of extraordinary wisdom. It is not to be presumed for a moment, that any being will be allowed to exercise the prerogatives of deity, or be invested with his awful authority, who is not delegated by God himself. To suppose that God would enable one commissioned by himself, to perform miracles in the confirmation of error, is to suppose him to give his awful sanction to deceive mankind.

END OF BOOK III.

BOOK IV.—CHAPTER I.

Of our Acquired Perceptions, and the Metaphysics of Vision.

LET us return back, for a few moments, upon our footsteps, and retrace the progress of our primitive man or philosopher, in attaining the first elements of human knowledge. We have seen that the number of his original perceptions would be extremely limited, and that he would be utterly unable to determine from what kinds of objects they were derived. By sight he would perceive, at first, only a variously coloured superficies, but of figures, distances and magnitudes would know nothing. By the ear he would distinguish sounds with their several tones and degrees of intensity, while he was ignorant of the causes from which they proceed; and by smell the variety of odours which were wafted to that sense.* All this time, however, he would be acquainted only with himself and his own sensations? His ac-

* Dr. Reid in chap. 6, sect. 8, of his *Treatise on the Human Mind*; says, “if we should suppose that smell and sound were conveyed in right lines from the objects, and that every sensation of hearing and smell suggested the precise direction or position of its object; in this case, the operations of hearing and smelling would be similar to those of seeing; we should smell and hear the figure of objects in the same sense as now we see it; and every smell and sound would be associated with some figure in the imagination, as colour is in our present state.” We should smell and hear the figure of objects!! Would not this be to outstrip Don Quixotte himself, renowned as he was for his exploits, who never pretended to any thing more than having seen his Dulcinea by hearsay?

quaintance with the objects around him would soon commence, and curiosity, as well as enjoyment, would prompt him to extend it. Subjecting the things which presented themselves to his sight to the examination of his touch, he would discover that, instead of exhibiting to him any longer only a plain surface variously coloured, they were formed in different figures, and situated at different distances. Marking the appearances which objects displayed to the sight, when thus examined by the sense of touch, and taking these appearances as the signs by which to designate and distinguish them in future, after repeated attempts, he would be able to perceive their figures and magnitudes by sight alone. This process by which the mind arrives at a perception of figures, magnitudes and distances, is what the young man couched by Cheselden, very significantly denominated learning to see. Suppose, for instance, the case proposed by Molineux to Mr. Locke, of a globe and a cube being placed before the young man just mentioned, immediately upon his receiving sight, and it is evident, as determined by Mr. Locke, that he would not, at first, distinguish the one from the other. But after examining them both by the help of touch, and discovering their real figures, and marking at the same time with attention the peculiar appearance which each presented to the eye; that appearance, whenever it was again presented, would become the sign by which the thing signified, whether the globe or cube, would be known. This method of procedure of the understanding in obtaining its acquired perceptions, may, without a figure of speech, be styled the interpretation of signs. The same thing happens in the case of hearing, smelling, taste, and all the senses. They have their lessons to acquire by experience and observation, as well as the sight. At first we are sensible only of the sensations, which sounding bodies occasion in us, according to their different modifications and various degrees of intensity; afterwards by habit and attention we learn to distin-

guish the objects from which they proceed, as well as to relish the higher pleasures of concord and harmony. Thus the variety of sounds also become so many signs, by which their several notices are conveyed into the understanding, and objects discriminated from each other. We distinguish every day instantaneously, and without any effort of mind, the voices of the different persons with whom we are in habits of intimacy, the noises which are occasioned by thunder, cannon or fire-arms, that of the various vehicles of conveyance which pass by our doors, and numberless others of a similar nature. These are none of them original, but acquired perceptions. Hence it is both with sight and hearing, that they become liable to such an indefinite number of mistakes and delusions. For, whenever, either by art and contrivance, or from mere contingency, the sign by which certain objects are exhibited to the mind, can be presented, the objects themselves will appear to be present. Thus, for example, after our primitive man had learned to distinguish a globe by his sight from its peculiar appearance, if the painter had placed in his view a globe drawn in a picture, he would have imagined it to be a real globe, and expected that it would seem such to his sense of touch. We find that the young man couched by Cheselden, discovered his surprise that those things in a picture which seemed to have bulk to his sight, were not found to have it when touched; and showed his astonishment by asking which of his senses it was that deceived him. In this power of deceiving the sense of sight, meaning by the term deception the presentation of the mere signs of things, and not the very things themselves, consists the painter's art; as in deceptions of the ear by the various modulations of sound, consists the whole power of the ventriloquist. This view of the subject, will serve also to explain what appears to most persons to be an unaccountable phenomenon of the human mind; viz. that when we are deprived of one of our senses, the others, it is said, become more acute, and convey to us

a greater number of perceptions, or more extensive information; insomuch that some persons who are blind, are known to be able to distinguish colours by the touch, and to become much more acute and nice than other men in their discrimination of sounds. There is no necessity, however, in order to explain this fact, to have recourse to the vulgar solution, which supposes, that when we are deprived of one of our senses, greater vigour is communicated to the rest, since this is a mere gratuitous assumption, unsupported by proof or probability. The phenomenon is readily accounted for by adverting to the circumstance, that when we are divested of one of the senses, it becomes indispensably necessary, in order to attain that information in regard to the objects around us which men so eagerly pursue, to attend to all the nicest and most delicate perceptions of the others. A man, for instance, who is deprived of sight, being cut off from all those interesting notices conveyed into the mind by that organ, and anxiously desirous of obtaining those ideas which he found prevalent among others, would exert himself to the utmost to supply the deficiency; and in order to this end, would closely and minutely attend to all those delicate perceptions of touch, which would pass unnoticed by him were he able to arrive at this intelligence from any other quarter. Hence, although he can have no idea of colours, by the nicety of his observations, he will learn to distinguish cloths of the different colours by his touch alone, as well as to conduct himself by this sense from place to place, with considerable ease and safety. The young man couched by Cheselden, complained, after he had gained his sight, that he was losing the faculty of walking in the dark. This was the natural result of the change in his condition; for having now obtained possession of the higher power of sight, he found it no longer necessary to pay attention to those perceptions of touch by which he had been formerly directed, and they passed entirely unnoticed. Thus we perceive, that from the very first moments

of infancy, when we open our eyes to admit the light, we are placed in a state of pupilage to nature; and from her as our instructress, while as children we are pursuing our innocent sports and gambols, are deriving insensibly to ourselves, the most sublime and important lessons. It is a very common observation, that children learn more during the first two years of their lives, than in any equal portion of time afterwards, and we can now enter fully into that view of the subject, and feel how philosophically just and true the opinion is. Every time the child, the little pupil of nature, opens its eyes, listens to a sound, pursues an object of desire, moves its limbs, or lisps an articulate sound, it is imbibing the most important and useful instruction. Let us leave our children, then, to the enjoyment of that license and freedom from restraint in this first stage of life, which their Creator evidently intended, to follow their native impulses, and seek the gratification of all their innocent desires. Those indolent mothers who, in order to save themselves the trouble of paying attention to them, put them under the care of mistresses, where, even before their infant faculties begin to unfold themselves, they are constrained to pore over lessons which are rendered irksome and disgusting, only because prematurely urged upon them, their little limbs constrained and their growth impeded, their minds tortured with the fear of punishment, and their health impaired by unnatural constraint, are as violently thwarting the benevolent purposes of nature, as outraging the feelings and wishes of their offspring. Such forced and premature instruction may become the cause of very serious evils and inconveniences to the rising generation, but can never be productive of any useful consequences. As those parents, who have the justest views of human nature, will never suffer themselves to be too much elated with discovering in their children a remarkable precocity of genius, since such precocity scarcely ever realizes the expectations it excites; so those who have the most vor-

rect views of the matter of education, will never regard it as a subject of boasting, or a ground of future expectation, that by this hot-bed kind of process, their offspring have been able to attain to a proficiency in learning, which awakes the surprise and astonishment of the vulgar. ¶ Those lessons, which are at this very early period attained with infinite toil and difficulty, and perhaps with the loss of health and comfort, at a more mature age would come to them almost unsought. Let nature, therefore, the kindest and most indulgent of all mistresses, be their instructress, who so gently mixes the agreeable with the useful, and let the only lessons which are imbibed at this early period, be derived from her universal school.

But to return from this short digression to the subject of our acquired perceptions. On the subject of the acquired perceptions of sight, several questions have been raised. In the first place, it is asked, whether we do not originally perceive objects in an inverted position, as the image upon the tunica retina is known to be inverted? And whether, of consequence, our seeing them erect is not an acquired perception?

As soon as it was discovered by Kepler that in our perception of the objects of sight, the image upon the retina is inverted instead of being erect, this was a natural inquiry in philosophy. In order to render the subject as clear as possible to the reader, we will suppose a small table A with a globe B resting upon it, placed in view of a man who has never before seen, but has just been couched by the surgeon. Now, the question is, since the globe B will be below the table A in the image upon the retina, whether it would appear, at first, to be really below it in external nature? We have before stated the appearance which an object of this nature would present to a man under these circumstances; viz. that of a plain superficies variously coloured, as he would have no idea of distances, figures, or magnitudes. Supposing, then, the globe B, and the table A to be black,

and before a white wall, all that the newly couched observer would be able to distinguish, would be such a form as would be made by the globe and table, if painted in black upon white canvass. To simplify the query, then: On this white canvass would our observer seem to see the globe resting below the table, according to the position of the image upon the retina, or above it as it exists in nature? Bishop Berkeley, with his usual refinement and subtilty, would say, that our ideas of upper and under are merely relative; and we call that upper which, when examined by the touch, is above the earth, and that under, which when examined by the same sense, is nearest to the earth. Now as the perceptions of sight have no resemblance to those of touch, we could form no idea originally, when we perceived any thing by the eyes, whether one part was under, and the other above, according to the previous decisions of the sense of touch. The only way, therefore, that we could obtain, by sight, ideas of what our sense of touch had taught us as above and below, would be, by marking the appearances which the higher and lower parts of objects display, and then, when those appearances are again exhibited, we shall be able to recognize them. Thus, for instance, noticing the peculiar appearances exhibited to us by the globe and the table, and observing by the touch at the same time, that the one is placed above the other, whenever the same appearance is presented to the eye, we at once know that the one is above, and the other below, or the one the farthest from the earth, and the other the nearest to it.

This solution is of a piece with Bishop Berkeley's system and views of things, and may be justly applied in explaining the phenomena of all our acquired perceptions of sight. But it seems to leave entirely out of the account, that we must have some original perceptions of sight as well as touch, and of course does not solve the phenomenon in question. Nothing can be more certain, according to the principles we

have before stated, and proved from experiment and observation, than that by our sight we should at first be unable to decide which was the globe, and which the table, as before ascertained by our touch, the case being the same stated by Molineaux to Mr. Locke, since there can be no kind of resemblance between the perceptions of touch and those of sight; but, at the same time, it is not to be denied, that we should have original perceptions by sight of the globe and table, as distinct from each other, as those which we had of them by the touch.* In other words, the appearance which

* Mr. Jurin, in his remarks upon Article 132, of Dr. Smith's opticks, speaking of the problem proposed by Molineaux to Mr. Locke, maintains, that Mr. Locke was right in deciding that a blind man who had known a globe and a cube only by his touch, if suddenly restored to sight, would not be able at once, to determine which was the globe and which the cube; but thinks, that without touching them, if they were presented to his view, and he was told that they were a globe and cube, he would be able to distinguish the one from the other. The process of reasoning by which Mr. Jurin thinks the blind man would be able by sight alone to determine which was the globe, and which the cube, is in substance this: that the blind man when he went around the globe, and viewed it on all sides would find that it affected his sense in the same way, while the cube would differently affect his sense according to the position from which he viewed it. Now, upon reflection, he would recollect that the same effect had been produced upon his sense of touch, the globe producing always the same sensation, while the cube differently affected him. Hence he would conclude, that the one which produced one invariable sensation by means of the eye, must be the same as that which produced an invariable sensation by means of touch." I am inclined to think that this view of the subject is mistaken. It is true, as we have asserted in the text, that the sensation produced by the globe, and that produced by the cube through the organs of vision, would be different; and if any other person should inform the man, thus restored to sight, that the figure which presented a regular curvature was the globe, and that which varied in appearance was the cube, he would ever after be able to distinguish them from each other by sight alone. But unless he received the information from some other person, or actually touched the objects, and compared his sensations of sight and touch together, and discovered by examination, that the object which to

The globe presented to the eye would be as diverse and distinct from that presented by the table, as the figure of the one, when handled and examined by the sense of feeling, would be from that of the other. Besides, although it be strictly just and philosophical to assert, that there is really no resemblance between the perceptions of sight, and those of touch; yet there would be so far a congruity or correspondence between them, that it would be utterly impossible, that the same object which presented to the feeling the sharp angles and projecting points of the table, should exhibit to the eye the regular curvature, and smooth surface of the globe. From these observations, I think, it must appear evident that, if in our first impressions, we perceived by our sight the globe below the table instead of being above it, as it is found in nature, when we came to compare together our perceptions of sight with those of touch, we should be able to determine that it was so. Now, from the experience of those who have been couched, it has been ascertained, that although the image painted upon the retina is inverted, yet the object is invariably perceived from the first in an erect position. Not one of them could ever discover that the object appeared inverted. The original question, therefore, again recurs to be solved, if soluble, by philosophy. How it happens that we perceive objects erect

his touch appeared to be a globe exhibited such a peculiar appearance to the eye, and so of the cube, he never would be able to discriminate them. How could he know, according to Mr. Jurin's opinion, that the same thing which occasioned one uniform sensation to the sight, would occasion a uniform and invariable sensation to the touch? For ought he could know, that object which occasioned the same sensation always to the eye, might have been the one which occasioned such a variety of sensations to the touch. He might, indeed, if we suppose him coolly to reason and philosophise on the subject, make the similarity of perception in both cases a ground of conjecture that they were occasioned by the same object, but never a ground of demonstration or entire certainty.

when the images of them painted upon the retina is evidently inverted?

In order that we may have clear and distinct ideas on this point, I would remark, that we should keep constantly in view the nature of perception, that it is an act of the mind and not of the body, although it is undoubtedly produced by the instrumentality, and through the intermediation of the external organs of sense. By the very terms in which the proposition is enunciated, it would appear as if the difficulty is occasioned by our imagining the mind to perceive the image upon the retina, and not the outward object itself. Otherwise in what consists the difficulty? We have before seen that the doctrine held on this subject, is, that rays of light pass from the object to the eye, and being refracted by its humours and the chistaline lens, form an image upon the retina, and by means of some motions, or some action communicated to the nervous coat and the brain, enable us to perceive it. The formation of an inverted image at the bottom of the eye, is, therefore, nothing more than a part of that train of action in the system to which, by the wisdom of the Creator is annexed a perception of the mind. Now we know that it is a mystery, unsearchable to the human understanding, how any action upon a system of bodily organs could occasion a perception in the mind; but what has the mind to do with an erect or inverted image? Is not the effect the same upon the mind, whether the action be produced upon the lower part of the eye or the upper? Has the mind an upper and lower part? But the mind while connected with the body, is dependent upon it for its informations of this nature, and must be governed by those laws that influence the operations of body. True. And we have only to determine, according to what law we see objects through the instrumentality of the organ of the eye, to render this whole matter extremely clear. Now we know that, except in cases of optical delusions, we always see objects by

means of those rays of light, that pass in straight lines from those different parts to the eye. By the straight lines that pass from the upper part of any thing to the eye, we perceive the upper part of it, and so of the lower. Of consequence, in vision, whatever may be the position of the image upon the retina, whether it be inverted or erect, we must perceive it as it exists, or nearly as it exists in nature, unless the sight be deceived, as we know frequently happens. This, perhaps, is as far as we are able to penetrate into the mysteries of nature. Des Cartes, however, has undertaken to proceed a step farther in this matter, and explain in what manner, by means of an inverted image at the bottom of the eye, we may perceive an erect object. His account of the phenomenon is the following. He asserts, that every part of the retina is connected by the fine capillaments of the optick nerves to corresponding parts of the brain; and that when the rays of light from any part of an object fall on the retina, by means of these fine capillaments of the optick nerves, an effect is produced upon the corresponding parts of the brain, by which means the mind perceives every thing in the direction of those rays of light. Hence it is, that although the rays of light that pass from the upper part of an object, and those from the lower part cross each other as they make their way through the humours and lenses of the eye, and fall upon opposite parts of the retina, those that are emitted or rather reflected from the upper part of the object going to the lowest on the retina, and the contrary; yet, in as much as the effect is produced upon the corresponding parts of the brain, we perceive the upper part of the object by means of the rays that fall upon the lower part of the retina, and the lower part of the object by means of rays that fall upon the upper part of the retina, as we feel the upper and lower part of any thing by means of two sticks that cross each other, and are held in both hands at the same time; the hand that is below enabling us to perceive by

means of it the higher part of the object, and that which is above enabling us to perceive by means of another stick crossing the first, the lower part. This account may serve well enough as an illustration of the operations of one sense, by tracing an analogy between them and the operations of another, but furnishes no solution of the phenomenon of our seeing erect objects by inverted images. We should think it no satisfactory explanation of the manner in which, by the sight, we are able to hold converse with objects at a distance, to say that by means of rays of light transmitted in straight lines to the eye, we perceive them, as we perceive remote objects by means of a stick held in our hands by which we touch them, or in the language of Mr. Addison in his *Spectator*, that the sight is only a more delicate and diffusive kind of touch, presenting to us at a single glance the greatest distances and magnitudes in the universe. This is a beautiful similitude with which to please the fancy in the productions of the poet or fine writer, but in the rigid disquisitions of philosophy should be repudiated. How we are able to feel objects in immediate contact with us, by means of the organs of the body, we know no more than how we are able, by means of rays of light intromitted into the eye, to discern remote ones. To allege, therefore, as is done by Des Cartes and others, that we perceive the upper and lower parts of objects by means of rays crossing each other in the eyes, as we are able to perceive the upper and lower parts of objects by means of sticks crossing each other, is not to advance a single step in our philosophical inquiries, or in the development of the properties and laws of nature. All that can ever be known to the most diligent and persevering inquirer on this point are, evidently, the following facts: that the rays of light which are emitted from the upper part of objects are transmitted to the lower part of the retina, and those which are emitted from the lower part of objects to the higher part of the retina, and that of

consequence these rays cross each other: that such is the connection of that delicate membrane, the tunica retina, with the fine capillaments of the optick nerves leading to the brain, that any action produced by the rays of light upon the lower part of it gives us a perception of the upper part of the object, and any action upon the upper part of it, in like manner, a perception of the lower. This is a law of our constitution, and when we have resolved it into that law, we have probably advanced to the utmost limits of human knowledge in the matter. All that we are able to demonstrate from fact and observation, is, that there are certain parts of the retina which must be acted upon by the rays of light in order to present objects to us in one situation, and other parts which must be acted upon in order to present them in another. To illustrate this observation by a familiar example. While looking at a candle, I press the ball of one eye out of its usual position; so as to cause its axis no longer to be directed towards the candle. In this experiment, I no longer see a single candle, but the real candle, together with one more faint in its appearance. In this case, with the eye which has been undisturbed, I see the real candle, and with the eye that has been pressed, such a candle, as, if there was another real one in that direction, would be so faint and dim as to produce no greater impression upon the organ than is now produced by the one before me, casting its rays obliquely upon the bottom of the eye. Now what is the reason that by only turning my eye round in its socket, I am made to see, not only the real candle with one eye, but the image of it with the other? Evidently, because upon the eye which is turned aside, the same effect is produced, as if a real candle of the figure and appearance of the image, were presented; that is to say the tunica retina, and the nervous coat connected with the brain, together with the brain itself, are acted upon in the same manner as they would be if a candle of that appearance were exhibited to the eye. When

one part, therefore, of the tunica retina is operated upon, it is calculated to present an object to us in one situation; when another is acted upon in another, and this upper or under, on the right or left side. Now, again, let us put the candle in our view, and press our eye as before, and we perceive two candles, a real one which is brighter, and its image which is more faint. Let us now suppose a luminous object extending from the candle to its image. It is evident that the rays which come from the right hand of this luminous object, fall upon the left hand of the retina, and those which come from the left upon the right hand of the retina. Supposing the real candle before to have been upon our right, by directing our eyes to the right side of the luminous object, we shall see it appear as luminous as the real candle did before, while the part of the same object upon the left appears more faint as the image before mentioned did. These facts show without any room for doubt, that when those parts of the tunica retina that lie upon the right hand are operated upon by the rays of light coming from any thing, they make that object appear upon the left, and vice versa. The same reasoning will apply to the upper and under parts of objects. All the conclusion, therefore, to which we can come upon this subject, is, that it is the established law of our constitution, that rays passing from the upper parts of bodies, and falling upon the lower parts of the retina, present to our perception those upper parts, while those which come from the lower impinge upon the upper regions of the retina, and cause us to see the lower; and if from any cause the effect can be produced upon the upper or lower parts of the retina, the corresponding portion of the object will appear to be exhibited although it should not exist in reality.

CHAPTER II.

The same Subject Continued.

THE next questions to be solved on this subject are, how come we to see any object singly with two eyes? Do we see objects single or double originally with both eyes? Is our seeing an object single with both eyes an original or acquired perception?

It must be admitted to be oftentimes an extremely difficult task, to distinguish our acquired from our original perceptions. In many cases our acquired perceptions become so familiarly connected with our primitive ones, that it is difficult, even in imagination, to separate them from each other. Every experiment which has been hitherto made in this matter, leads to the conclusion, that nature has endowed us with the power of seeing objects single with both eyes, immediately and without effort. In every case in which the blind were restored to sight by Cheselden, he could never discover that any one among them saw objects double. Children, as soon as they begin to see, move both eyes in concert, when any thing is presented before them, which seems to indicate that both eyes are employed at the same time in the contemplation of any thing. Children, indeed, as well as those who are suddenly restored to sight, find a difficulty in directing their eyes to different objects; but they discover no difficulty in causing them to act together. All the phenomena, therefore, lead to the conclusion, that nature has communicated to us the power of effecting a simultaneous motion of both eyes, in order more successfully to accomplish the purposes of vision; and this simultaneous movement of

the eyes is evidently intended to occasion the images of the same thing to fall upon corresponding parts of the retinae. Now, this consentaneous motion of the eyes, which causes the images of objects to fall upon corresponding portions of the retinae, must be produced by the original conformation and adjustment of the organs of vision, the eyes, the optic nerves, the muscles and other appurtenant membranes. What can be the nature of an adjustment which leads to such curious results? We wish to indulge no hypothesis in philosophy, regarding all hypotheses in science as counterfeit coin, whose circulation is prohibited by the strictest laws of investigation; but in a matter in which we shall probably not be able to attain absolute certainty, may not the solution of Newton, when rightly interpreted and clearly understood, be deemed satisfactory? In his 15th query annexed to his optics, he says, "are not the species of objects seen with both eyes, united, where the optic nerves meet before they come into the brain, the fibres on the right side of both nerves uniting there, and after union going thence into the brain, in the nerve which is on the right side of the head, and the fibres on the left side of both nerves uniting in the same place, and after union going into the brain, in the nerve which is on the left side of the head, and these two nerves meeting in the brain in such a manner that their fibres make but one entire species or picture, half of which on the right side of the sensorium, comes from the right side of both eyes, through the right side of both optic nerves, to the place where the nerves meet, and from thence on the right side of the head into the brain, and the other half on the left side of the sensorium comes, in like manner, from the left side of both eyes? For the optic nerves of such animals as look the same way with both eyes, as men, dogs, sheep, oxen, &c. meet before they come into the brain, but the optic nerves of such animals as do not look the same way with both eyes, as of fishes and the cameleon, do not meet, if I am rightly informed." I do

not stop here to inquire into the correctness of the opinion, that the optic nerves of such animals, as look the same way with both eyes, meet on their way to the common sensorium, as this is a subject of doubt and disputation. It is certain that they tend towards each other, and very nearly meet in their passage from the eyes, which is all that is necessary to the proof of our theory. Nor do I stop to discuss the incomprehensible doctrine of sensible species, which Newton merely takes up from the schools, in order to convey his ideas. I conceive that when the language of Newton is divested of the scholastic jargon, he will be found to be aiming at the truth. In simple and intelligible phrase, then, the theory which Newton here suggests, and which according to his usual caution, he puts into the form of a mere query, as he was in the habit of doing when he was not able from the facts to arrive at entire certainty, is this: that that adjustment of the optic nerves by which they are made gradually to approach each other, and at length either to meet or nearly to meet, seems like a contrivance to enable us with both eyes to see an object single at the same time. Now is not this in a high degree probable? It is certain, that this is a matter about which it is extremely difficult to obtain conclusive evidence. From the position and delicacy of these organs, experiments cannot be made upon them by the investigator of nature; and of course, we must wait, with patience, for the disclosure of those facts, with which nature herself shall supply us in the ordinary course of providence. But in a case about which, we admit, we are unable to arrive at entire proof, could any final cause seem to be more clearly revealed, than that the optic nerves leading from the eyes to the brain are made to join or approach each other, in order that the actions which are excited in them by the images formed upon the bottom of the eyes, may coalesce into one at their place of junction, and thus occasion in the mind one single perception or impression? Of what nature

that action is, which is excited in the tunica retina or optic nerves, we know not; but that there is an action of some kind or other, has before been shown to be admitted by all philosophers. Now we could not conceive of a contrivance to make these actions upon the nerves of both eyes to commingle in their passage, and become blended into one, and by this means occasion a single impression upon the brain, better calculated for the purpose, than that of causing these fine capillaments to meet, or nearly meet, and touch each other on their way to the common sensorium. We have before stated our views of the system of Hartley, and repudiated it as a mere hypothesis, and unworthy of the philosophy of the present day. A theory, however, which will not bear the test of critical examination, may furnish us with an apt illustration of our doctrine. Suppose these optic nerves, leading from the fund of the eyes to the brain, to be fine elastic cords, like those of a stringed instrument. By being united or nearly united at any given place on their passage to the brain, would not any vibrations excited in them, be so mingled and confounded at their place of junction, as to appear beyond that point to be one single vibration? Why, then, may we not suppose with Newton, that in a mode similar to this, nature, by this arrangement of the optic nerves, enables us to see objects single with both eyes? In this adjustment too, if it be really the product of nature, and not falsely ascribed to her, we may discover a very curious adaptation of this part of the system to another; viz. those muscles appertaining to both eyes by whose means we are able to move them in concert, or preserve their axes parallel to each other, without which, it is well ascertained from fact and experience, we should see every object double. As by the use of these muscles we are enabled to direct both our eyes to a single object, so that the images of it shall fall upon corresponding points of the retinæ; so, by this tendency of the optic nerves towards each other, one single impression is conveyed to the seat of

sensation. Thus one part of the system is seen ministering to the successful operation of another. The human frame, throughout its whole structure, is admitted to be one of the most curious and wonderful pieces of mechanism that can be presented to our inspection. However distinct the mind may be from the body in its properties and powers, it is certainly dependent upon it in its present state, for many of its most familiar and important operations. If the muscles or tendons refuse to perform their offices, all voluntary motions by their means are suspended. If the parts of the ear contrived for the reception and conveyance of sound be injured or destroyed, there is either no sensation, or a very indistinct perception of sounding bodies. If the humours or lenses of the eye be obscured by accident or disease, or the retina and nerves leading to the brain be disordered, there is no vision. In all these and numberless other cases we find mechanical contrivances rendered subsidiary to the operations of the mind. Why may they not be so in the case under consideration? It seems scarcely more certain, that most of our muscular actions are performed by the operation of muscles and antagonist muscles, or that motions of the bones are performed by means of the hinge joints in some instances, and in others by means of those of the ball and socket, than that the tendency of the optic nerves to unite in their passage from the eyes to the brain, is intended to enable us to see objects single with two eyes.

If the theory above maintained be true, we can readily give a solution of the question with which we commenced this essay. A man born blind, and suddenly restored to sight by the surgeon, upon opening his eyes would not originally see objects double but single, as he does afterwards; and our seeing objects single with two eyes is not an acquired but original perception. This conclusion is confirmed by experience. Cheselden could not discover in any one instance, among those whom he couched, that when

restored to sight they saw objects double; and it is evident that children upon first opening their eyes see objects single, since they move them in perfect concert, and do not allow them to roll in their heads, or wander in different directions. The facility with which we move our eyes from place to place, and object to object, is the result of habit, since neither children, nor those who have been couched, are able to do this at first with facility; but the power of moving both our eyes in correspondence with each other seems to be instinctive.

From this view of the subject, the causes, or most of the causes which occasion double vision, stand clearly revealed. If from any circumstances, as for instance, spasm, disease, accident, extreme debility of the system, alterations produced in the humours and lenses of the eye, or from any other cause of a similar nature, which the experience of physicians only are the most likely to disclose, the organs of vision be impaired, so that the parallel motion of the eyes is interrupted, or the action conveyed by the optick nerves be intercepted or disturbed in its transmission to the brain, or images of objects be formed upon different parts of the retina, the object may appear double. To mention a very ordinary phenomenon, an instance of which came under my own observation. A lady of my acquaintance, on one occasion after the birth of a child, during the heat of summer, became so extremely weak from indisposition, that every object appeared double. That this effect was produced by extreme debility alone, appeared evident, from the circumstance, that as soon as by proper regimen she was restored to her health and strength, the effect ceased. Whether in this case her double vision arose from a weakness in the muscles alone by which the parallel motion of the eyes is effected, or in some diseased or imperfect action in the fine capillaments of the optick nerves, it is impossible to decide. She remarked, however, during the continuance of this

double vision, that she saw no object as distinctly as before, every thing appearing to be dimly perceived, in comparison with that state of vision to which she had been accustomed. This dimness of vision was a natural consequence of seeing objects double, as the real object in this instance, would be perceived only with one eye, while the other would be directed to that which is apparent only. The same effect as this is produced in the very common experiment of placing a lighted candle before you, and pressing one side of the eye with the finger, so as to push that eye out of its state of parallelism with the other; for in this case, two candles will appear to be in view. This single experiment, simple as it is, shows, that in order to see objects single with two eyes, the images of them must be painted upon corresponding parts of the retina; for when by forcing one of the eyes out of its natural position, the images are made to fall upon parts of the retina which do not correspond, we seem to see objects double. For this reason, it would seem tolerably certain, that persons who squint, must originally see objects double, as it is evident that from some defect in the conformation of the organ, they are deprived of the power of moving their eyes so as to preserve their axes parallel, and of consequence the images painted on the retina must be in parts which do not correspond. That they will soon become insensible of this double vision, and appear to see objects like other people, would seem to be also a natural result from the force of habit. As the object, towards which they directly turn one of their eyes, will always appear much brighter than the apparent figure or image presented to the other, they would instinctively turn the attention of the mind solely to it, and all perception of the false object would soon pass unnoticed. Thus when we direct our view to any thing in nature, we always have within our sphere of vision many other objects besides the one immediately occupying our attention, although from the habit of directing the view

of the mind to that one only all the rest of them are unnoticed. The same doctrine is confirmed by a fact related by Dr. Smith in his opticks. "If two lighted candles of equal height be viewed at the distance of two or three feet from the eyes, so that the picture of the right hand candle, on the left retina, shall correspond to that of the left hand candle, on the right retina, only one image will be produced by these two corresponding pictures. But the two pictures, which do not correspond, viz. that of the right hand candle, on the right retina, and that of the left hand candle, on the left retina, will each produce its proper image.

With these principles in our possession, I conceive the explanation will be easy, of the fact mentioned by Cheselden. "A gentleman, he tells us, who from a blow on the head, had one eye distorted, found every object appear double; but by degrees the most familiar ones became single; and in time all objects became so, without any amendment of the distortion." In this case, may he not by habit have ceased to pay any attention to the false appearances of objects, and have confined his view solely to the real objects themselves? We can learn to do this as easily with the eye, as with the sense of hearing, we can attend solely to some sounds which interest us, and lose all perception of the numberless other noises which at the same moment, may be assailing the ear. A similar explanation may be given of another case referred to by Dr. Smith in a note, upon article 137, of his opticks. "The Rev Mr. Foster, having been blind for some years, of a gutta serena, was restored to sight by salivation. Upon his first beginning to see, all objects appeared to him double; but afterwards the two appearances approaching by degrees, he came at last to see single, and as distinctly as he did before he was blind." After Mr. Foster, by salivation, had been relieved from the obstruction which prevented his seeing, the double appearance of objects might have been occasioned at first by some irregular action in the muscles of the

eye, or in the nerves leading to the brain, which ceased as soon as he was restored to sound and perfect health. Upon the whole we think that upon the true inductive plan of reasoning, in which all our conclusions are made to rest upon experience and observation, we have sufficient ground upon which to establish the following principles; that we are originally so constituted by our Creator as to see objects single with both eyes; that in order to this purpose, the muscles and membranes of the eyes are so adjusted, as to enable us to move them in concert with each other; that images of objects are formed upon corresponding parts of the retina; and that a similar action upon the optick nerves leading to the brain must be produced, and that those actions must be made to mingle and coalesce in their progress to the sensorium. These are doctrines which appear to be sufficiently proved by experience. It must be left to the practitioners of medicine to determine in each case the remedies, which will be most likely to effect a cure. In the case of double vision arising out of debility, the system must be strengthened and its tone restored, and in that of squinting every expedient should be resorted to, consistent with the delicacy of the case, to assist the muscles in performing their regular functions of dilatation and contraction, so as to communicate to the eyes their appointed movements.

Mr. De la Hire supposes, as Mr. Jurin represents his opinion, that in the generality of mankind, that part of the retina, which is seated in and about the axis of the eye, is of a more delicate sense and perception, than what the rest of that coat is endowed with; and therefore, that we direct both axes to the same object, not only for the sake of direct vision, whereby the image of the object may be more distinctly and perfectly painted upon the retina, but likewise, and indeed, chiefly, in order to receive the picture upon that part of the retina, which can best and most accurately perceive it. But in persons who squint, he conceives the most

sensible part of the retina of one eye, not to be placed in the axis, but at some distance from it on the one side, or on the other; and that, therefore, in the eye so unusually framed, not the axis but this more sensible part of the retina is turned toward the object, on which the axis of the other eye is fixed; and consequently both axes are not directed to the same point!" If this theory were true, which Dr. Smith by an appeal to fact and experience has demonstrated to be false, would not persons who squint always see objects double? I apprehend they would, since in this case, images of any object would not be formed upon corresponding points of the retina, and yet each one would be as bright and distinct as the other, and of course the object would be as clearly seen by one eye as the other. After confuting by unanswerable arguments the opinion of Mr. De le Hire, Mr. Jurin, I conceive, falls into mistakes himself. "Nor is squinting occasioned," says he, "by any defect in the muscles of the distorted eye. For when the other is shut, this eye is moved by the action of its muscles, in all possible directions, as freely as that of any other person." This argument by no means proves the point at which it aims. For might not the muscles be so formed as to move both eyes very freely in their sockets, and yet be so imperfectly adjusted during the formation of the fœtus in the womb as to pull irregularly, and occasion that distortion which is called squinting? Ropes might easily be adjusted so as to pull two globes freely at the same time in their sockets, and yet not act in concert with each other. Neither is his second proof any more conclusive. "Neither is it (squinting) owing," he continues, "to the want of correspondence in the muscles of both eyes, such as to hinder them from being both moved the same way at the same time. For when both eyes are open, and the undistorted eye is moved either upwards or downwards, or to the right or left, the other always accompanies it, and is turned the same way at the same instant of

time." Surely the muscles might be so arranged as to pull the eyes the same way at the same time; and yet, if from any defect in their original formation, they could not contract and dilate alike, they might draw one of the eyes out of its state of parallelism with the other, and thus occasion that phenomenon which is called squinting?

It is very possible that squinting may, in some instances, be produced in the manner maintained by Mr. Jurin. He thinks, that in persons of this description, when they look at any object, the pupil of the distorted eye is drawn close to the nose, and the distance between the pupils lessened, and this lesser distance between the two pupils continues the same in all oblique directions of the eye: so that the two axes are never pointed at the same object, though the muscles do so far act in concert with each other, as to move both the eyes the same way at the same instant of time.

If I am not mistaken, squinting is not always occasioned by the pupils coming nearer to each other, than they do in those persons not affected with this blemish, as the same defective appearance in the eyes would be exhibited in case the pupils were always too remote from each other. But even supposing that they do, do we not find at the same time, that the eyes do not move in concert, and that the axis of the deformed one always approaches too near, or recedes too far from the perfect one?

We concur in the concluding observations of Mr. Jurin under this article. "This vicious habit," says he, "of squinting, may be contracted by a child, if he is often laid in his cradle in such a position, as to be able to see either the light or any other remarkable object with one eye only. And when by this means he is brought to squint, and is afterwards confirmed and settled in the practice of doing so, I apprehend it will be in vain to attempt a cure by his wearing tubes or shells, with small holes in them to look through. Do what you will of this kind, he will continue to see

through them distinctly with one eye only, and will still distort the other. The true method of cure, I take to be this. When the child is arrived at such an age as to be capable of observing directions, place him directly before you, and let him close the undistorted eye, and look at you with the other. When you find the axis of this eye fixed directly upon you, bid him endeavour to keep it in that situation, and open his other eye, you will now immediately see the distorted eye turn away from you towards his nose, and the axis of the other will be pointed at you. But with patience and repeated trials, he will learn by this effort to keep the distorted eye fixed upon you, and thus effect a cure."

CHAPTER III.

Of Deceptions of the Senses.

THAT our senses sometimes deceive us, furnishes no argument against the truth of those informations which they give in their sound and natural state, and respecting those things concerning which their testimony ought to be trusted. Besides, admitting the veracity of their testimony as the reporters of matters of fact, the errors into which they lead may all be accounted for upon the strictest principles of philosophy. Nothing can be more idle and unworthy of the serious and sober spirit of philosophy, than a sceptical turn of mind. Our powers of understanding, although no doubt competent to every useful and important purpose of life, and exactly accommodated to our state of being, it is not to be denied, are extremely limited, and our investigations necessarily circumscribed by very narrow bounds. But, because our faculties are not able to penetrate into all mysteries, and all knowledge, to deny ourselves the advantage and enjoyment of that portion which we can attain, and arrest our footsteps at our first approach into the dominions of nature, because we are not able by a single effort to tear off the veil in which she shrouds her secret operations, and disclose to view her mighty plan; discovers not only an irreverence for the Creator, who hath bestowed upon us our rational powers, bordering upon impiety, but the utmost levity and wantonness of mind.

We have before illustrated the justness of the observation, that in all our acquired perceptions we proceed according to

the interpretation of signs, and whenever the sign of any thing is presented, the mind naturally concludes that the thing signified is present. A gentleman passing along the streets of Philadelphia, imagines that he perceives a steam-boat in the Delaware at a distance, but upon approaching it, finds that he was deceived, for that the object he saw was a sign-post before an inn, upon which the representation of a steam-boat was rudely painted. Here the same sign was presented to his eye as if a steam-boat had been really moving upon the river. In the same manner are effected all deceptions of sight, touch, taste, or hearing.

In the month of January, of the present year, 1821, three suns were distinctly seen in the heavens, at Montreal, in Lower Canada, and we know that in Europe two, three, five, and even seven, have been seen at one time. These phenomena are occasioned by the refraction and reflection of rays of light during a very condensed state of the atmosphere. Now, what should we think of that man who, because two, three, or even six suns, besides the real sun, are sometimes perceived, should maintain that there is no such thing as a real sun? And yet this man would have much better ground for his conclusion than the sceptick who denies the evidence of the senses, since he, in this case, distrusts only the evidence of his eyes. In the very common experiment of crossing the fingers, and placing a pea or marble between them, so that it shall touch two sides of the fingers which do not correspond, there appear to be two peas or marbles. Here also there is presented the sign by which we have been accustomed to distinguish two objects of this nature, and of course, two appear to be present. It is for want of a knowledge of this kind, and frequent observation of such signs, that children and ignorant persons are so apt to be mistaken in the perception of objects at a distance, or of those whose appearances are not clearly discerned. And even, with persons the most intelligent, the nicest observation becomes ne-

cessary in order rightly to distinguish objects by these signs, and from the earliest period of life, we are acting the philosophers in this respect, although unconsciously to ourselves, in the prosecution of this kind of study. The force of reflection and habit in these matters is rendered very evident by the consideration, that whenever we are taken off our guard, and unprepared to form a judgment, we discover all the imbecility and incapacity of children. A strong reason in such cases is of little or no avail. He who has been accustomed to determine magnitude and distances only upon a horizontal plain, finds himself greatly at a loss in determining them when he looks up to a height, or down from some elevation. The men, who according to Shakspeare's representation, when beheld upon the strand from the heights of Dover, appeared like rooks or crows, if beheld upon a level surface, would have assumed their natural dimensions. A man seen through a mist appears much larger than he really is, because to the circumstance of his usual size in nature, and the image upon the retina, there is added also the other part of the sign of great bulk, to which we become familiarized, that of great distance, in the dimness with which he is viewed. A tree when beheld over a wall, however large or remote it may be, appears to be a small shrub or twig, resting upon the wall; until we become sensible of the interjacent space, and then the delusion vanishes. Bishop Berkeley remarked that when passing through Italy, on account of the uncommon clearness of the Italian sky, objects which were remote appeared much nearer to him than they did in other climates. Oblique distances appear longer in proportion as the eye is raised higher, to view them more distinctly, and long walks with a rising mount or ascent at the end, appear longer than they really are, especially if they be artfully contracted at the ascent so as to present the natural appearance of a long level walk with parallel sides. Animals and houses, and all objects of this nature appear

smaller upon the sides of mountains than in any other positions, because mountains always appear nearer to us than they are. Dechales tells us, says Dr. Smith in his opticks, from whom I have taken several of these fallacies of vision, that while he stood at the bottom of a mountain, he once observed a parcel of crows going to fly over it, which, at first, he thought were higher than the mountain, but he found they spent half an hour in ascending before they got to the top. Aguilonius, continues the Doctor, mentions a fallacy in distance, which he had frequently observed and admired. In a warm summer's morning when fogs are exhaled from moist ground, we frequently see them very near us in some known place; but so soon as they are separated from the ground and are going to ascend, they appear so remote, that he could never have believed that they hung over that place, had he not seen them there but the moment before. The reason is, that they, then, appear in the manner and direction of other remote clouds in the horizon, whose difference and distance cannot be discerned for want of some visible surface extended between them, like the surface of the ground while the rising cloud lay upon it. It is said to be a common observation of travellers that small objects, as houses and trees, seen in the dusk of the evening, appear remote, and larger than they naturally are. The same view of this subject will serve to account for the following facts mentioned by Mr. Jefferson in his notes upon Virginia, page 122. "Having had occasion," says he, "to mention the particular situation of Monticello for other purposes, I will just take notice that its elevation affords an opportunity of seeing a phenomenon which is rare at land, though frequent at sea. The seamen call it looming. Philosophy is as yet in the rear of the seamen, for so far from having accounted for it, she has not given it a name. Its principal effect is to make distant objects appear larger, in opposition to the general laws of vision, by which they are diminished. I know an

instance at Yorktown from whence the water prospect eastwardly is without termination; wherein a canoe with three men, at a great distance, was taken for a ship with its three masts. I am little acquainted with the phenomenon as it shows itself at sea; but at Monticello it is familiar. There is a solitary mountain about forty miles off in the South, whose natural shape as presented to view, is a regular cone; but by the effect of looming, it sometimes subsides almost totally in the horizon; sometimes it rises more acute and more elevated; sometimes it is hemispherical; and sometimes its sides are perpendicular, its top flat, and as broad as its base. In short, it assumes at times the most whimsical shapes, and all these, perhaps, successively in the same morning. The Blue Ridge of mountains comes into view, in the North-east, at about one hundred miles distance, and approaching in a direct line, passes by within twenty miles, and goes off to the South-west. This phenomenon begins to show itself on these mountains, at about fifty miles distance, and continues beyond that as far as they are seen. I remark no particular state, either in the weight, moisture or heat of the atmosphere, necessary to produce this. The only constant circumstances are its appearance in the morning only, and on objects at least forty or fifty miles distant. In this latter circumstance, if not in both, it differs from the looming on the water. Refraction will not account for the metamorphosis. That only changes the proportion of length and breadth, base and altitude, preserving the general outlines. Thus it may make a circle appear elliptical, raise or depress a cone, but by none of its laws, as yet developed, will it make a circle appear a square, or a cone a sphere." With all due respect and deference to the opinion of this distinguished man, distinguished alike in the history of his country's politicks and her literature, I apprehend, that the phenomena here stated of the canoe, which in the bay of Yorktown is sometimes mistaken for a ship, and of the various

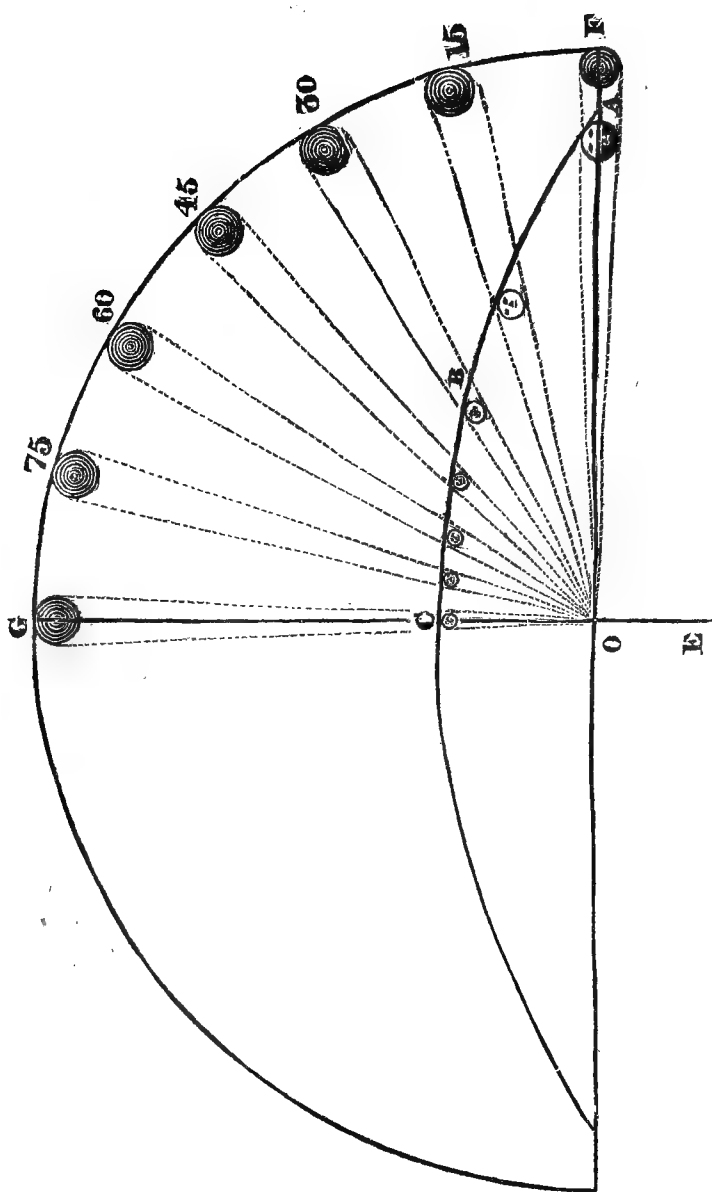
appearances exhibited by the mountain to be seen from Monticello, are to be ranged under very different classes, and solved upon different principles. When a canoe, with three rowers in it, is seen at a distance through the mist or towards the dusk of evening, and is mistaken for a ship, this fact is to be classed under those fallacies of vision, which the seaman, indeed, denominates looming, and which although its name is unknown to the systems of philosophy, yet the thing itself is perfectly familiar, and has been repeatedly explained. Nothing is more deceptive than the view of distances upon water, and when to this circumstance is added a misty air and obscurity of the object, another sign of great distance, the smallest things may easily appear to the sight to be the largest. There is nothing more commonly known in optical science than that inversion of the ordinary laws of vision, by which distant objects are made to appear larger than they really are. Every day's rising and setting sun furnishes an example of this kind. As to the singular variety of appearances exhibited by the mountain in the vicinity of Monticello, I presume they are all referable to the ordinary laws of the reflection and refraction of light. Such a changeable medium as the mist of the morning which lingers upon a valley below a mountain, would very naturally, when that mountain was beheld through means of the light that passed through it, be altered into the most various and fantastick forms. The writings upon opticks supply us with instances of this kind in the greatest abundance.

I shall conclude this brief article upon deceptions of sight, by an attempt to explain that phenomenon so often observed, and of which so many solutions have been given, the increased dimensions of the sun and moon in their apparent diameter, at their rising and setting. Dr. Smith, in his opticks, gives the same solution of this phenomenon, as had before been given by Mallebranche, Dr. Wallis, and others. He remarks that the apparent sky above us, in which the sun

and moon seem to move, is not a complete hemisphere, in the centre of which is placed the eye of the spectator, but a less portion of a spherical surface than a hemisphere, where the eye of the spectator is greatly above the centre of the concavity. Of this flatted concavity of the sky above us, we are all sensible; that is to say, that part of the sky which rests upon the horizon, appears to be much more remote from us, than that which is in the meridian over our heads. This, we are told, affords a solution of the phenomenon of the increased size of the rising and setting sun.

For we judge not of the magnitude of any object, says Dr. Wallis, as quoted by Bishop Berkeley, by the visual angle alone, but by the visual angle in conjunction with the distance. Hence, though the angle remain the same, or even become less, yet if withal the distance seem to have been increased, the object shall appear greater. Now one way, whereby we estimate the distance of any thing, is the number and extent of the intermediate objects. When, therefore, the moon is seen in the horizon, the variety of fields, houses, &c. together with the large prospect of the wide extended land or sea, that lies between the eye and the utmost limb of the horizon, suggest unto the mind the idea of greater distance. And this is the true account of the extraordinary largeness, attributed by the mind to the horizontal moon, at a time when the angle subtended by its diameter, is not one jot greater than it used to be.

The account here given of this phenomenon, is the same as that of Dr. Smith. I have been the more particular, says the Dr., in considering the apparent figure of the sky, because I do not find it has ever been determined, although it be absolutely necessary to a satisfactory solution of several noted appearances in the heavens; for instance, supposing the arch ABC, (See the Plate.) to represent that apparent concavity; I find the diameter of the sun or moon, will seem to be greater in the horizon than at any proposed alti-



tude, measured by the angle AOB, in the proportion of its apparent distances, OA, OB. The numbers that express these proportions, are represented to the eye in the figure over against the corresponding altitudes of the sun or moon, in which the suns or moons placed in the quadrantal arch FG, described about the centre O, are all equal to each other, and represent the body of the moon at the heights there noted; and the unequal moons in the concavity ABC, are terminated by the visual rays that come from the circumference of the real moon, at those heights to the eye at O. The diameters of these unequal moons, at A and B, do therefore, bear the same proportion to each other as their apparent distances OA, OB; and they must appear in the very same proportion that they really have in this concave, because we judge all objects in the heavens to be in this very surface; and so the appearance to the eye is exactly the same, as if several moons were painted upon a real surface ABC, in the proportions here assigned; though the visible magnitudes of them all answering to their equal images upon the retina, were exactly equal.

This theory is ingenious, and I doubt not, contains in it some degree of truth. To the extent, however, to which it is carried by Dr. Smith, it is justly liable to some objections. There are two objections against it, considered as the sole cause of the phenomenon in question, which at once strike the mind, and cannot easily be obviated.

The one is, that in this calculation there is no allowance made for the different sizes of the sun's apparent disk, as it descends at different times, upon the limb of the horizon; and the other, that if we look at the sun or moon, at its rising or setting, through a window, in such a manner that all prospect of the concavity of the sky, and interposing space of earth, shall be cut off, the same appearance of increased magnitude is exhibited. The first of these objections has

been anticipated by Dr. Smith, in a note upon article 164 of his optics, where he acknowledges that the horizontal sun and moon appear at different times, of different magnitudes. In order to remove this difficulty, he supposes, that in such cases, the images formed upon the retina are larger or smaller. He inclines to the opinion, that the largest horizontal moons, happen generally at her perigee in the warmest summer evenings, the barometer being low, and the thermometer high; and on the contrary, that the smallest horizontal moons, happen generally at her apogee in the coldest winter mornings, the barometer being high, and the thermometer low. According to this account the largest suns and moons, when setting or rising, should be seen through a clear and thin atmosphere in summer, and the smallest through a thick and dense one in winter, as these are known to be the results, if they depend solely upon the refraction of the rays of light. I am entirely convinced, however, from my own uniform experience, that not only is this account erroneous, but that the direct contrary is the fact. At all seasons of the year, I have remarked, that the sun varied in his dimensions at setting, and that too in quick succession, sometimes scarcely appearing to be diminished, and at other times exhibiting his greatest magnitude. As far as my observation has extended, too, I have become convinced that the sun's disk is always larger at setting, when we have reason to believe, that the air is filled with exhalations. Just before a spell of wet weather, it is largest; and before a long succession of dry and clear weather, it is uniformly smallest, the very reverse of what Dr. Smith supposes to be true.

As to the second objection to the theory, that the increased size of the sun and moon at setting, depends upon a view of the interjacent distance and objects, I would proceed to remark.

If this be the sole cause of their augmented size, how happens it that the sun or moon, when rising or setting, if

viewed through a window, where both the flatted concave of the sky, and the view of interjacent fields are excluded, still appear larger? After having made several observations, all of which went to confirm me in the impression, that this presented a very great difficulty in the system of Dr. Smith, upon recurring to Bishop Berkeley's essay at a new theory of vision, I find that he has in part anticipated the objection I have stated. "With reference to this opinion, I shall only observe," says he, "that if the prospect of interjacent objects, be that which suggests the idea of farther distance, and that idea of farther distance, be the cause that brings into the mind the idea of greater magnitude, it should hence follow, that if one looked at the horizontal moon, from behind a wall, it would appear no bigger than ordinary." The objection, as stated by Bishop Berkeley, is not entirely conclusive; and may be evaded by alleging, that although the wall will cut off the whole prospect of interjacent space, yet one of the signs of distance still remains, the apparent figure of the sky. But how shall we, upon Dr. Smith's principles, account for the fact mentioned above, that even when the rising or setting sun is viewed through a window, or from any situation in which all prospect of the sky above, or earth beneath is excluded, it still exhibits the same augmented size? It will not answer to refer this to the force of habit, for habits cannot lead us to be deluded by fallacies in vision, when the very signs themselves, by which those fallacies are occasioned, are removed. It appears to me, therefore, that so many contradictory phenomena are presented to the theory of Dr. Smith, that we are compelled to resort to other principles in addition to his, in order to solve them all. These principles, I am inclined to think, have been stated and ably defended by Berkeley, although greatly mixed with errors, and tinged as all his writings are, with his fanciful doctrine of immaterialism. In his essay at a new theory of vision, the

most valuable of his productions, he says—"Now in order to explain the reason of the moon's appearing greater than ordinary in the horizon, it must be observed, that the particles which compose our atmosphere, intercept the rays of light proceeding from any object to the eye, and by how much the greater is the portion of atmosphere, interjacent between the object and the eye, by so much the more are the rays intercepted; and by consequence, the appearance of the object rendered more faint, in proportion as it sendeth more or fewer rays into the eye. Now, between the eye and the moon, when situated in the horizon, there lies a far greater quantity of atmosphere, than there does when the moon is in the meridian. Whence it comes to pass, that the appearance of the horizontal moon is fainter, and therefore, it should be bigger in that situation, than in the meridian, or in any other elevation above the horizon." This is the solution of Bishop Berkeley, which receives strong confirmation from many phenomena, and which seems to be indispensable to account for the changes or variations, which are continually taking place in the dimensions of the horizontal sun and moon; and more especially from the appearances exhibited by them, when neither the concave surface of the sky, nor the interjacent planes are perceived. Dr. Smith has undertaken to refute these doctrines of Bishop Berkeley, but I think without success. The arguments with which he assaults them, we shall now state, and endeavour to show that they are insufficient. First, he maintains, "experience shows that various degrees of the moon's faintness, make no sensible variations of her apparent magnitude, because the moon appears much fainter in the day-time than in the night, and therefore, according to our author's principle, should appear larger by day than by night, at the same height, which I could never perceive, though I have often viewed the moon for this purpose." This is by no means a just inference from Bishop Berkeley's doctrine. It is not every

kind of faintness in appearance, which suggests to the mind great distance and magnitude. It is only that kind of faintness, which has been usually found indicative, or significative of great distance and magnitude. When, for instance, we view from a distance, mountains, forests, or any large objects, the rays of light being intercepted in their passage to us, give to them that dim and faint appearance, which suggests the idea of great remoteness and dimensions. But this is not the case in all kinds of faintness. The moon, when seen in the day-time, when her light fades before the sun, sheds but a dim light indeed, but it is not that kind of dimness, which we have been accustomed to contemplate as the sign of distance. The same answer may be given to many other appearances, that seem to contradict this system. As for example, if it be asked why does not the sun, when beheld through a darkened glass, or on one of our Indian summer-days, when he is enveloped in smoke and darkened, appear much larger at such times, as he is more faint, and may be contemplated on such occasions with the naked eye? The answer is, that these are not those faint appearances, which are significative of great distances and magnitudes, and therefore, no more convey such conceptions to the mind, than mere arbitrary sounds, which have not been agreed upon by mankind, as signs of ideas, could awake those perceptions in them.

The two next objections of Dr. Smith, admit of a similar explanation. 2dly. "I observe," says he, "that the horizontal moon, being much fainter than the horizontal sun, viewed by the naked eye, should, in consequence of that principle, appear much larger than the horizontal sun." This consequence does not rest upon sufficient ground, because greater degrees of faintness, are not always so good signs of distance as less degrees. A man seen through the dim lights of a city, does not appear larger than he is, but seen through a thick fog he does.

3dly. "I observe," continues Dr. Smith, "that the moon when totally eclipsed, appears much fainter than she does at the same elevation, when not eclipsed; but does not appear larger than usual." We have already furnished the answer to this objection.

Upon the whole, we are inclined to think, that the increased dimensions in the disk of the horizontal moon and sun, is to be accounted for, only by having recourse to the causes assigned both by Dr. Smith and Bishop Berkeley. Neither of the causes separately serves to explain all the phenomena, and it appears indispensably necessary from the nature of the case, that they both should conspire in producing the results. The sun and moon, we are sure, move apparently in that concavity of the sky above us which is flatted, and the parts of which, that rest upon the limb of the horizon, evidently seem more remote than those which are above our heads. While their real dimensions, therefore, remain the same, they are perceived at one time to be more remote than at another. In such case, from the known laws that influence the fallacies of vision, they must appear larger when resting upon the horizon. But this cause does not serve to explain all the phenomena, and the principle of Bishop Berkeley, must undoubtedly have its influence also in producing those effects. We know that when objects are seen at a distance, the rays of light proceeding from them are dispersed on their passage, and many of them never reach the eye. This gives to such objects a peculiar appearance of dimness and faintness. This appearance, therefore, becomes to us the sign of distance and magnitude. Now the sun and moon are large objects, which as they approach the horizon have to shoot their rays, before they reach our eyes, through a larger tract of atmosphere, and atmosphere more dense from its immediate vicinity to the earth. Under these circumstances, we know that these objects must always ap-

pear larger, although it is admitted, at the same time, that the image upon the retina of the rising and setting sun and moon, are not increased in magnitude; and moreover, that according to the usual laws by which light is refracted and reflected, their image upon the retina, formed by rays, passing through a denser medium, instead of being larger, must really be diminished.

CHAPTER IV.

Of the Progress of the Mind, in the Acquisition of Ideas.

AT what time the fœtus in the womb of its mother begins to think, and when the soul is united to the body, are questions which it is probable, the human understanding will never be able to determine. That at a very early period it begins to perceive, and becomes sensible of pain and pleasure, appears to be sufficiently proved from the fact of its frequent movements. From its intimate connexion with the mother, its deriving all its nutriment from her, and the circulation of the same fluids through them both, it would appear to be scarcely subject to doubt, that it sympathises in all her emotions, is pained with her sorrows, and affected with pleasurable sensations when she is delighted. All these matters, however, are subjects not of science or knowledge, but of speculation and conjecture. We have no facts upon which to build certain conclusions. Many marvellous stories are upon record of the effects produced upon the body of infants, by the imagination and emotions of mothers during a state of pregnancy; but all such accounts are to be regarded by us, with a philosophical incredulity. Two of the most remarkable and best authenticated facts of this kind, which I ever remember to have read, are related by Mallebranche in his Search of Truth. He informs us, that there was to be seen in Paris, at the Hospital of Incurables, a young man, an idiot, whose bones were all broken, or exhibited the appearance of having been broken, like those of a criminal

put to death upon the rack; and that this effect was generally ascribed to the circumstance, that his mother, while big with him, had witnessed the execution of a criminal, who was put to death by that species of torture. He further informs us, that this young man lived to the age of twenty years, and was visited by the queen, and a great number of other persons, who could testify as to the truth of the facts which he records. The second instance mentioned, is that of a mother in a similar condition, who in celebrating the festival of the canonization of a Pope, was more than usually devout, keeping her eyes fixed upon the picture of the Pope which was hung up in the church; the consequence of which was, that upon the birth of her infant, it was found to exhibit a resemblance of the pontiff, having the visage of an old man, 'as far as a child could appear so without a beard, his arms crossed upon his breast, his eyes turned up towards heaven, and displaying at the same time the appearance of a mitre, and even of the precious stones with which the mitres of the popes are usually ornamented. Mallebranche ascribes all these results to the power of the mother's imagination, and endeavours to illustrate the manner in which they might be produced, by the operation of the animal spirits in the human system, the hypothesis by which at this period of science, many of the phenomena of the mind were attempted to be solved. For example, he alleges, that when the mother saw the criminal put to the rack, and his limbs successively broken upon the wheel, from the force of sympathy, the animal spirits would rush to a part of her body, which corresponded to the injured parts of the criminal, and occasion her to feel pain in it. Now from the intimate connection between the fetus in the womb, and the mother, a like operation of the animal spirits in it would occasion a like sensation, and its little limbs, not having as yet acquired a hardness and consistence, sufficient to enable it to resist the impression, as in the case of the mother, would be

broken by the shock. The same explanation is given of the second instance mentioned above.

Notwithstanding the learned solution of this venerable Father, and that he tells us in both cases the facts were sufficiently attested by many witnesses, all of whom, no doubt, agreed in believing that there was a real and striking similitude between the objects here compared, and that these similitudes were to be traced only to the cause* assigned, we must be allowed to lend to all stories of this nature a very unwilling ear, and to yield them an academic faith. There is no ground for denying that in both the cases recited, the children were really exhibited, and were thought to bear a resemblance to the objects abovementioned; but upon no just principles of science can we find any ground for concluding, that these effects were produced by the cause to which they are referred. We discover no caprice or freaks in the works of nature. All the appearances she displays are the results of established principles or causes which operate by steady and uniform laws. Monsters, it is true, are sometimes produced by a departure from those uniform and established laws. What occasions nature in such instances, to depart from her usual course, and to flow in unaccustomed channels, philosophy is unable to explain. But least of all should we expect to find the cause of these phenomena in one of the constituent and most important principles of our nature, the imagination of the mother, a principle, which, if it act in this way at all, ought to be considered as acting uniformly and invariably to produce similar results; and then, instead of having a few cases of this kind during the lapse of ages, such monsters should become common, and man should appear to us, not with his present uniformity of proportions amidst such endless variety; but in every fantastic shape imaginable. Upon this principle, ought not every woman who in a state of pregnancy, witnesses the execution of a criminal upon the gallows, to have a child born with its neck injured or broken?

Should we not find a large portion of our race deformed? Besides there is no necessity for having recourse to such a solution in order to account for the fact of unusual births. They are to be referred to the anomalous productions of nature. We cannot explain the manner in which the fœtus in the womb, grows into the regular form of the human species; and why should we expect to explain the manner in which it grows into the irregular and distorted? But upon a sober view of the subject, can it be considered in any degree wonderful, that amidst the thousands and millions of births which take place upon the globe, a child should have been born in Paris, whose limbs all exhibited the appearance of having been broken, and that by a singular contingency, that child's mother should have seen the execution of a criminal upon the rack? Such contingencies in other matters are not uncommon, and excite no surprise. Besides, I am confident, that to those who will take the pains to examine minutely, the similitude between children of whom such reports are circulated among the vulgar, and the objects to which they are compared, it will appear to be very remote and scarcely perceptible. It is usually the imagination of the spectator, which, at first, conceives a resemblance, and then fills up the outlines. The force of fancy in such cases is immense. I remember myself to have seen in the state of North Carolina, a young woman of a singular appearance, and very defective in understanding, whose face was vulgarly said to resemble a sturgeon's, and that resemblance was ascribed to the effect produced upon her mother by a fright into which she was thrown in crossing a river, when a fish of that species leaped suddenly into the boat. I could not trace the smallest resemblance between the young woman and the fish, which was so generally perceptible, and should never have thought of such a thing, had it not been suggested by others.

Facts of the kind above referred to, are to be accounted for upon principles similar to those upon which we explain

the phenomena of dreaming, and their interpretations. Is it in any degree remarkable, that amidst the endless succession of thoughts which occur to the mind in dreams, where the most variegated scenes are displayed to the fancy, webs of every hue are woven by it, and where we seem to pass through all sorts, and conditions of being, sometimes retracing the past, and then anticipating the future, there should be some things represented to us which bear a resemblance or analogy to what afterwards takes place in reality? The symbols too, or hieroglyphics, which are supposed to adumbrate the scenes of real life, are of so ambiguous and doubtful interpretation, that like the responses of the ancient oracles, they may be made to signify very different and even opposite things. It will be excused in the poet with the license of his profession, to represent dreams as coming down from heaven; but in the sober inquiries of the philosopher, no impressions can be found upon them which bear its sacred image and superscription. It would be strange, indeed, if the Creator had resorted to this fantastic mode of communicating to us information, which we are unable to obtain, in our waking hours, by the severest application of mind and the most persevering habits of investigation.

All that idle confidence, therefore, in dreams by which the peace of some persons is, in no slight degree disturbed, or in the power of the mother's imagination to produce such great effects in the form of the child, is to be regarded as childish superstition, from which philosophy should cleanse the soul.

CHAPTER V.

Progress of the Mind, in the Acquisition of Ideas, Continued.

PERCEPTIVITY, or the power of perceiving, seems to be the distinguishing property, that separates animate from inanimate nature. The perceptive powers, however, of the different species of animals differ greatly in their degree of delicacy and refinement. Those substances and qualities which are, in a high degree, agreeable to some animals, are extremely offensive to others. The line of separation between the vegetable and animal kingdom is not always distinctly marked. The lowest link of animated nature, as the cockle and the oyster, partake so nearly equally of the properties of the animal and the vegetable, that it is difficult to decide under which denomination they should be classed. Of all animals, man, undoubtedly, is susceptible of the greatest variety, of the nicest and most delicate perceptions. Brutes appear to be entirely incapable of reflecting upon the operations of the principle within them, and those bodily sensations to which all their knowledge is confined, are of the coarsest and grossest kind. Let us now pursue our primitive man, in the prosecution of that knowledge which his limited faculties enable him to attain.

By sensation and reflection we have seen him attain all his simple ideas, about the existence and qualities of body and mind. Some ideas he would obtain by one sense only, others by several senses; some by reflection or sensation only, and others by both sensation and reflection. Light, and the several colours, as white, red, yellow, green, blue, with their

several shades and modifications, come into the mind by sight alone; sounds and tones, only by the ear; the several tastes and smells, only by the palate and nose. The ideas of space, extension, solidity, resistance, hardness, impulse, impenetrability, we get originally by touch, as soon as we press our hands upon bodies, and find that they resist them; although afterwards we learn to judge of some of them by the other senses, as by the eye and ear. By reflection alone do we obtain our simple ideas of duration and succession, perception or thinking, volition or willing, with their several simple modes, as remembrance, discerning or discrimination, imagining, reasoning, judging, knowledge, faith, doubting, &c. The ideas of pleasure, pain, delight, torment, power, existence, unity, and number, come both by sensation and reflection. Positive ideas too may be derived from privative causes, as the rays of light strike upon the eye and give us a perception of light, the absence of those rays occasion a new affection of the organs and gives us a notion of darkness. So the absence of heat gives us a sensation of cold, the absence of whiteness, the sensation of black, that of taste, insipidity, of noise, silence, the absence of something of which we have a complex idea, a notion of nothing. By reflecting upon the train of ideas as they pass and repass through the mind, we obtain our notions of succession and duration; by comparing objects with themselves as they appear at different times, we get ideas of identity and diversity; by comparing different objects with each other, our ideas of equality and inequality, relation, similitude and dissimilitude; and by witnessing objects produce changes or alterations in each other, we obtain our ideas of power.

After having obtained its simple ideas by external and internal perception, the mind proceeds to the exercise of its several powers, to form its simple ideas into complex combinations, to enlarge, compound and diversify them at its pleasure. By the power of thinking, our primitive man, finds

himself continually occupied during his waking hours, by the power of discernment or discrimination, he learns to distinguish his several perceptions from each other, by that of contemplation he fixes his mind upon a train of thoughts which he feels himself inclined to indulge for the time. To his surprise and astonishment he soon finds phenomena of his mind exhibited altogether incomprehensible. By an act of his will, he can fasten the view of his mind upon a single point which he wishes to consider, so as to investigate it on all sides, and this is called the act of attention, intension or study, according to the intensity with which he applies the mind to the matter in hand. If he becomes inattentive to every idea passing through his mind, and every object without, he falls into a reverie. He soon discovers in himself the unexpected power of renewing the information he had before obtained, or reviving ideas he had previously acquired, but which appeared to have been entirely obliterated and lost: and this is called memory; which power is exerted in two very distinct methods; in simply retracing those trains of past thought, that involuntarily upon our part spring up in the mind, which is simple remembrance; or voluntarily exerting the powers of the understanding, in bringing again to our view something that it is difficult to recall, and this is denominated recollection or reminiscence. Imagination is that faculty of the understanding by which we collect ideas which we have previously received, and join them together at our pleasure, so as to frame pictures or representations out of them. By composition, we enlarge and compound our ideas, by abstraction we obtain general notions, by the power of comparison our numerous ideas of relations, and by association we connect together perceptions, which we have been in the habit of receiving in conjunction. Judgment gives us a good insight into truth and nature; reason transports us from truths which are known to those which are unknown, and by the will we determine to act or not act according to

our choice; while motivity or the power of acting enables us to execute our determinations. Our instincts, propensities, affections and passions, our social powers and moral sentiments likewise propel us to action.

Of each of these powers of the mind we shall treat in due order, descanting upon the phenomena which are exhibited by them, and, at the same time, endeavouring to explain upon the principles of philosophy some singular and anomalous facts.

CHAPTER VI.

The same Subject Continued.

THE first act which the mind exercises is thinking in general, under which head are included, as modes of thinking, perception, imagination, memory, reason, &c. Two of the peculiar doctrines of Des Cartes appear to have been that the essence of matter is extension, and the essence of mind is thought. Neither of these doctrines is well-founded. We all perceive a difference between our idea of extension and of that thing or substance, which fills space and is extended; and between thought, which is an act of the soul, and that thing which thinks. "If thought were the essence of the soul," says Mr. Locke, "then, there could be none of that intension or remission in thought, of which we find ourselves capable; as when we apply our minds to any subjects with more or less close attention. Now, if thought were the essence and not the operation of the soul, no such variation in thinking could take place, since the essence of any thing remains always unvaried. This subject, however, is intimately connected with another of much more difficult solution to the philosopher, viz. does the soul or mind always think, or is it sometimes inactive and quiescent? It is impossible for the human mind, definitively to determine whether that which is extended, may not by omnipotence be made to think, or whether that which is unextended must always think. In solving the question, therefore, does the soul always and ne-

cessarily think, we must be guided solely by the phenomena. Now the appearances of nature are strangely calculated to mislead us, if the soul always thinks, or what is probably, a more accurate statement of the question, if the man always thinks.

If we trace man to his origin in the womb of his mother, we shall find strong reason to conclude that he does not always think. The doctrine of innate ideas, being contradicted by all the phenomena exhibited by our race in a state of infancy, is now considered as exploded from philosophy. Now we know not the precise time in which the soul is united to the body, while the fœtus is in the womb of its mother, but we are sure that at some period between the time in which its formation commences, and that of its birth, the Almighty, besides breathing into it the breath of life, must also transfuse into it a living soul, a principle of intelligence. In what state, then, can we conceive this soul or principle of intelligence to be? Can it be thinking at the time of its union with the body? But about what can it be supposed to be thinking? Can it be thinking before it has acquired ideas? The only ideas we can conceive it to acquire even in the womb, are those of warmth, hunger and thirst, or perhaps, some dim perceptions of pain and pleasure, according to the condition in which it subsists there. Children which perish in the womb after they are completely formed, may, without any great stretch of fancy, be supposed to suffer pains, and perhaps severe ones, before their dissolution. These, then, are all the perceptions which the soul can be conceived to receive in the embryon state of man. We see that as yet there is no reason to conclude that he has more than a very few perceptions to occupy his mind. And the state in which the infant continues for some time after its birth, being sleepy, torpid, and inactive, affords no indication that its mind had been previously much excited by thinking. The first phenomena, therefore, exhibited by our race in a state of in-

fancy, seem strongly to lead to the conclusion, that the mind at its conjunction with the body, is not a thinking substance, but a substance capable of thought, imagination, reasoning, &c. and has its powers first excited into action, after its infusion into our corporeal system. We are apt to impose upon our understandings on this subject by terms that convey no distinct ideas, and to imagine that an unextended substance, which does not think, must be nothing. But does not the difficulty here consist in conceiving of an unextended substance at all, or a substance that occupies no part of space? Is there any greater difficulty in conceiving of an unextended substance possessing only the power of thinking, than in conceiving of an unextended substance which thinks? I presume not.

The next consideration which should lead to the conclusion, that thought is in some cases suspended, is, that there are so many instances within our experience, in which all consciousness of thinking is lost. When we are in profound and undisturbed sleep, in cases of swooning, a deliquium, and in drowning, when life is not taken away, but only suspended for a time, as appears from the reports of those who have experienced these changes, we are totally unconscious of having performed a single act of thinking. There is a case mentioned by Dr. Beattie of a man, who fell into a deliquium while giving an order to a servant, and who after lying in that singular condition, in which all the functions of body and mind seem to be intermitted, for six weeks, suddenly recovered the use of his faculties, and asked the servant whether he had executed his order, as if it had but that moment been delivered. Those who are drowned, and afterwards resuscitated, have no recollection of any thing but of the pains which they sustained in this mode of death; and of the still more distressing pains of their revival. But to descend to facts within the reach of every one's experience and observation, does not the mo-

ment in which we fall into a deep sleep, and that in which we awake out of it uniformly seem to touch each other? In such cases we have not the smallest or most dim perception of the progress of time, or of any thoughts that passed through our minds in the interval. Now, surely, upon the soundest principles of philosophy we have reason to conclude, that we could not spend so large a portion of our time in thinking without having some consciousness of it. Mr. Locke alludes to the case of a young man who lived to the age of twenty-five, or twenty-six years, without having experienced what it was to dream, and was then only made acquainted with that operation of the mind by a fever from which he was then newly recovered. Now, is it to be conceived that this young man could have spent one third of his time in thinking, which is the period usually devoted to sleep, without having been conscious of it in any single instance?

From consciousness we derive our proof that at any given time we are thinking or have ever thought; and were we destitute of this consciousness, we could never have sufficient evidence to convince us that we think.

Now in instances of sound sleep, of swooning, of a deliquium of suspended animation by drowning, we want this consciousness, and, of course, all evidence that we were thinking: how, then, are we to be convinced that we were still engaged in thought? When all those indications, by which a state of thought is discovered to ourselves or others, have ceased to be exhibited, what ground have we for concluding that we still continue to think? Look at a man wrapt in profound sleep. Do we discern in his appearance any of the signs or symptoms that denote a state of thinking? In that singular and extraordinary condition of being, making so near an approach to death, all the functions of body and mind, except those which are indispensable to life, appear for a time suspended. The eye is closed,

the respiration is difficult, the whole countenance fallen and changed, voluntary motion is discontinued, the spirit that once actuated and enlivened the features and all the organs of the body seems to have retreated to its citadel to enjoy a season of repose. There is not one indication that a single thought passes through the mind; the sleeper seems to be a different being from the man, and when he is suddenly aroused from sleep, he seems to have arisen to new life and perception, and unless he has been disturbed by dreams, to have commenced his existence anew. Could the phenomena presented to our view in any way more strongly indicate the total suspension of thought? It is incumbent upon those who deny that the soul ever ceases to think, to prove that proposition by satisfactory arguments. As all the appearances of nature are so decidedly unfavourable to their doctrine, the burthen of proof in this case lies upon them. Scarcely is there a man in the world, who, if left to the unbiassed suggestions of his own mind and is untutored in the dogmas and language of the schools, would not decide that in sleep we cease to think. It is the wisdom of science to pay great respect in such cases to the unadulterated sentiments and original impressions of nature.

In the next place, those operations of the mind, or modes of thinking which are the most familiar, constant, and invariable, cease in sleep, and this furnishes us with an additional proof that all other acts are intermitted also. We know that in sleep, both internal and external perceptions cease. The senses are all sealed, and no longer convey their notices to the mind's presence chamber. The body may be moved from place to place, the nose regaled with effluvia, and the ear assailed by the loudest noises, and yet no perceptions are occasioned in the mind. Do not these circumstances show that the spirit within has for a time resigned its commission, and along with the body is enjoying the sweets of repose? Is it to be credited that the soul has the power of exercising

a part of its functions whilst the rest are allowed to remain dormant; to reason, conceive, remember, imagine, while in her perceptions she is torpid? But it may be asked, does not this take place in dreams? Are not the powers of memory and imagination frequently employed in them to exhibit the past and paint scenes that appear to be present, while our other faculties are locked up in sleep? The case of dreams, instead of impugning the truth of our doctrine, tends to its support and confirmation. For it is worthy of our observation that as soon as we pass from sound sleep to that singular and anomalous condition of existence, called dreaming, in which it appears that our powers of reason, memory and imagination, are very imperfectly exercised, our perceptive powers also are immediately rendered more sensitive or excitable. We are much more easily awakened from a state of dreaming than of sound sleep. From what can this arise but from the circumstance, that our perceptive faculties are partially excited along with the other faculties of the mind, and perhaps in an equal degree with them?

But again, it may be said, does not the phenomenon of dreaming itself, show that the soul is always thinking, and that our dreams are nothing more than those sleeping thoughts, which because of their importance make a deeper impression, and are retained by the memory? I think that we shall readily be convinced that this theory is not well founded if we will attend to the following considerations.

We are all conscious of the transition from a state of sound sleep to that of dreaming, and that the latter is not the natural but disordered state of the mind during rest. If we are always thinking and recollect only important matters, how happens it that we dream less in sound health than in sickness? Do crudities and indigestion produce in the mind more interesting trains of thought than a healthful performance of the functions of the body? Are men in perfect health, less likely to have important conceptions in

sleep, than the nervous, the delicate, and distempered? It is evident, therefore, that dreaming is a state, or condition of being, *sui generis*, distinct from all others, and not merely a more recollected and interested attention paid to the ideas that are perpetually passing through the mind in sleep.

Another reason which induces me to believe that the soul does not always think, is, that a total suspension of thought, as well as bodily action, would seem to be necessary to that repose and refreshment which nature evidently intends us to enjoy in sleep. Even that incoherent and imperfect kind of thinking, which takes place in dreams, interrupts that kind repose which we derive from tired nature's sweet restorer, and after a night of dreams we awake in the morning much less refreshed than usual. It seems to be the attribute of Him only who never slumbers nor sleeps, always to have a succession of ideas passing through his mind, or rather at every instant to have all ideas and all knowledge immediately present to his view.

Another argument in favour of our doctrine, may be derived from a consideration of the causes that usually occasion sleep, and the efforts we involuntarily make use of to retard or accelerate its approach.

Animals that think least are the most inclined to drowsiness. Savages and slaves, who have the fewest ideas, spend a large portion of their time in dozing. When they are incapable of employing their minds in interesting reflections so as to keep their eyes open, is it to be believed, that they fall asleep and close them, that they may learn to think? In the case of all of us, when we become drowsy, are we not conscious of a gradual approximation towards a total suspension of thought, so that when the nod is produced we feel almost sure that we ceased to think? When we have spent the evening in company excited by lively conversation and a great variety of objects, which have successively en-

gaged our attention, upon our return to our chamber, we often find it difficult to compose ourselves to rest. What can occasion this difficulty but the rapid flow of thoughts which it is not in our power readily to check? And when we set ourselves to work to endeavour to promote sleepiness, do we not strive to banish those thoughts that intrude themselves, and engage, and agitate us, and turn our attention to others less calculated to excite us? Sometimes when we have been much interested in reading a book, or pursuing a subject of inquiry, the mind becomes so occupied and engrossed by it that sleep is driven from our pillow; and the only way in which we can recall it, is to drive those meditations which were awakened, from our minds. In all such instances, in order to induce sleep, we have to make an exertion to cease to think.

The last consideration which I shall suggest as leading to the conclusion, that the soul does not always think, is, that it would be inconsistent with the usual simplicity and frugality of nature, to suppose that she enables us to exercise a power so habitually to no useful purpose. If the intellectual machine within us is kept in operation during sleep, it is certainly labour greatly misapplied and lost. No one ever yet was sensible of any advantages which accrued to him from any thoughts that occurred during sleep. When were ever any plans of usefulness at such times projected, which had never occurred to the mind before, or any discoveries in science made? "Such a useless operation, as that of our thinking always during sleep cannot be the product of the all-wise Author of nature, whose ways in many instances, indeed, are past finding out, but are known to be invariably characterised by one peculiar circumstance, that he does nothing in vain.

Upon the whole it may be asked, how can we conceive that the soul should ever be without thought, whose great and distinguishing property is to think? Is it not as easy to

conceive of matter without extension, as of the soul without thinking? In regard to all questions of this kind, we must carefully observe that it is not by the conceptions of our limited faculties, that the works of an infinite Creator are to be estimated. If the phenomena which we observe, lead us irresistibly to the conclusion that the thoughts of the soul are suspended during sleep, and in some other states and conditions of the body, it forms no sufficient objection against the doctrine, that it is inconceivable to us in what manner the soul can cease to think. It is equally inconceivable to us in what manner the soul can think during sleep, or how it can think at all, or perform any other operation. But while it remains so intimately united with the body, and is found on all other occasions so tenderly to sympathize with it, why in the circumstance of taking repose only should it be conceived to act separately and independently of it? If the body is wounded, the soul is pained, if the body is in health the soul rejoices, and if in sickness, the soul pines and languishes. Why should it be supposed that it does not also partake of that singular state of existence which takes place in sleep?

And, in fact, without entering at all into the scheme of materialism, or Hartley's doctrine of vibrations, and vibrationcles or minor vibrations, by which he attempts to explain all the operations of the human mind, but which is subject to the misfortune, that there is not one solitary fact which can be exhibited to show that in any case whatever there is any vibration in the nervous system; I say, without entering at all into the scheme of materialism, or Hartley's doctrine of vibrations, which may or may not be materialism; may we not consider ourselves as having good ground to conclude, that in every case in which there is performed an operation of the mind, there takes place at the same time a correspondent operation in the body? In our present state of existence we find the mind and body, so intimately blended

together, that as far as our knowledge of facts extends, we are sure that no changes take place in the one which do not produce a kind of correlative or consentient change in the other. The soul, although not of the same substance with matter or the result of the organization of its parts, seems always to make use of matter as the instrument by which it performs all its operations. That God can, and does in some instances, form souls which are capable of thinking and acting without the aid or cooperation of material forms, seems highly probable to reason, and is expressly asserted by revelation. But in the condition in which the human soul finds itself in this life, it is constrained to operate with those imperfect instruments with which it is furnished in the organs of the human body. Without the eye it can obtain no notices of colour, without the ear of sounds, without touch of feeling, and so of the other senses. That is to say, it is by some unknown and inconceivable alteration produced in these senses by their several objects, that perceptions of these qualities are conveyed to the mind. When the eye melts with tenderness or flashes with rage, must there not be some strange alteration produced in the fluids that compose that organ to make it capable of such various expressions? The sentiment of rage not only exists in the mind, but there is a correspondent change produced in the body by which that sentiment is displayed. The same observation will apply in case of all the sentiments, affections, or passions, which are exhibited in the human countenance. We see a sword, plunged before our eyes, into the bosom of a friend. Should we not feel on such an occasion, a pain in the heart, or in that part of our body, which corresponds to that which was wounded in our friend? And, setting aside the doctrine of animal spirits, by which such phenomena were formerly explained, how could this pain at the heart be produced but by some action in that part of the body? On the other hand, let a wound be made in our own body, or the

gout or rheumatism affect us, and a pain is immediately occasioned in the mind. From these known facts, together with many others that might be enumerated, we think that there is good ground for concluding, that as on the one hand there is no operation of the body performed without a correspondent operation of the mind; so on the other, there is no operation of the mind, without a correspondent action upon the body. All the operations of the mind are performed, as we have reason to believe, through the instrumentality of the corporeal organs. When we perceive, therefore, when we remember, when we imagine, reason, will or accomplish voluntary actions, the soul must attain all these ends, during its present intimate incorporation into the body, by means of peculiar actions in the several bodily organs appropriated to those purposes by the infinite wisdom of the Creator. If the human body is not a perceiving, imagining and reasoning machine, accomplishing all mental operations by its own actions, as the materialists will have it, it must be admitted to be a machine admirably organized to become the instrument by which the soul effectuates all these purposes. And would not this opinion receive additional support from contemplating the nice and exquisite construction of its parts? What an array of materials do we find entering into its composition, what delicacy and refinement, are discovered in the fabrication of those materials by the heavenly Artist! What a nice and exquisite adjustment of the parts to each other; what wonderful operations are perpetually going on in the lungs, the heart, the blood vessels, the brain, the very bones themselves, and the whole system! Anatomists, who most nicely examine the human frame, find perpetually new wonders rising to their view, and are apt to embrace the doctrine of materialism from the circumstance that they find no great difficulty in conceiving, that a structure so curiously and wonderfully wrought, may be capable of all those incomprehensible operations usually as-

cribed to mind. Let them, however, be saved from tendencies of this nature by recollecting, that admitting the utmost refinement in matter, and the most exquisite skill in the adjustment of its parts, still there is an infinite distance between any effect which can be produced by mere matter, and motion, and thinking, imagination and reasoning. There is all imaginable difference between conceiving of mind, as performing all its operations through the instrumentality of the organs of sense, and conceiving of all those operations as being nothing more than mere modes of motion in the corporeal organs. The one we are assured is performed in some cases, as in perception by the senses; the other we are equally assured can never be a just doctrine, in as much as in the train of our ideas we are convinced, that modes of motion in our corporeal organs can make no kind of approximation to thinking.

Taking the above stated theory to be true, of the soul's always acting, in its present state, through the instrumentality of the corporeal organs, and medical science could furnish us with unnumbered facts to confirm it; and without the necessity of materializing the mind, as some philosophers have done, we may account for the phenomena before mentioned, as the state of the soul in sleep, in dreaming, a swoon, a deliquium, of suspended animation by drowning, of alienation of mind, of ecstasies, trances, and all those idle superstitions of the vulgar which relate to spectres and apparitions. In the case of sleep, of a swoon, deliquium, and suspended animation by drowning, as the soul finds the instruments with which it acts in a state of torpor it cannot operate, and is in the same condition in regard to all its faculties, as it is in reference to perception by the eye, when that organ is dimmed by a gutta serena, in a state of complete quiescence and inaction. What will be its condition, at its total release from the earthly tenement, reason can only conjecture, and revelation alone inform us; but while

it is bound in the fetters of its bodily organs, nothing could seem to be more certain, than that it cannot perform its functions without them. As to the singular and curious circumstance of dreaming, we think, that upon the principles we have prescribed, it may be explained, as well perhaps, as the human faculties are able to explain it. It evidently appears to be a partial and imperfect mode of thinking, that operation of which alone the mind is capable while the corporeal organs are drowned, and stupified in sleep. Let us proceed, however, as far as we are able to solve the phenomena of dreaming, so familiar, and yet so peculiar and interesting.

CHAPTER VII.

Of Dreaming.

SLEEP is one of those ultimate facts which take place in the course of nature, which a just philosophy does not attempt to explain. We can no more ascertain what alterations take place in the mind and body in sleeping, so as to cause the one to cease thinking, and prevent the other from acting, than we can determine in what thought, imagination, and reasoning themselves consist, and how the soul exercises these acts. The same, however, is not the case with dreaming. Being acquainted with the operations of the mind in its various modes of thinking, and with the evident state of insensibility into which the body is thrown by sleeping, we may afford a very satisfactory solution of the irregular and curious phenomena of dreaming, without having recourse, with Mr. Baxter, to the interference of supernatural beings, or without supposing, with Bishop Newton, that the doctrine of Homer still retains its authority, and that dreams descend from Jupiter, or are the immediate suggestions of the Divine mind. Such doctrines have no foundation either in reason or revelation, and are only calculated to encourage among the ignorant and credulous a silly and injurious superstition. Let us recur for our solution to the principles before propounded.

We have said that it has now been sufficiently substantiated by fact and experience, that in all cases of the operations of mind, there is a correspondent action produced in the bodily organs, and vice versa; although, in no case can we become acquainted with the nature of that action.

Thus there is one alteration produced in the corporeal system by perception, another by imagination, a third by volition, and others by reasoning, and the exercise of our passions and affections. All this nice and delicate machinery, the several parts of which the mind successively sets into operation in exercising its powers, is in a state of rest and inaction during sleep. Now suppose that while the mind and body are in this recumbent posture, any accidental cause, such as crudities in the stomach arising from indigestion, sudden pain or uneasiness resulting from partial stoppages in the circulation of the blood, or some impediments preventing the natural performance of the secretions or other functions of the body, or a thousand other causes which it is impossible to enumerate or ascertain; (for this effect might be produced by any thing affecting the senses, even while we are turning in bed.) Suppose, from some of these causes, the organs of perception are excited into action, or have those alterations produced in them which always accompany our perceptions. It is evident, under these circumstances, that our perceptive powers being partially roused from their dormant state would begin to act, and we should think, and a train of thoughts would succeed each other in the mind. The perceptive powers being thus excited into imperfect action, and the mind beginning to think, all its other faculties would be successively set into operation, as of imagination, memory, reason, volition, &c. That the mind may be excited into that imperfect action, denominated dreaming, by operating upon the organs of sense is proved by numberless facts. It is a common observation, that put any one's feet into cold water while he is sleeping, and we shall be able to extract all his secrets from him, since he will begin to dream and talk. The thoughts too on such occasions, usually fasten upon those objects that have a relation to our own sensations. Mr. Stewart mentions the case of a man, whose feet while he was sleeping,

being put into hot water, dreamt that he was walking amidst the burning lava of Mount Etna, and of another, who on account of sickness having a blister-plaster applied to his head, dreamt that he was scalped by Indians. These facts incontrovertibly show, that we may be made to think by such exciting causes externally applied to the senses. Let us proceed to state the usual phenomena of dreaming, and endeavour, as far as possible, to explain them upon the principles we have prescribed.

In the first place, it is to be remarked, that our dreams are woven out of the materials furnished by our waking thoughts, though for the most part, most strangely, incoherently and fantastically wrought together. Every man's dreams receive their hue from his own constitutional temperament of body and mind, and respect those transactions in which he is constantly engaged in life. Hence Milton, who often discovers as much of the Philosopher's insight into nature as of the poet's fancy, in his *Paradise Lost*, represents Adam as remarking to Eve, after she has recited to him her ominous dream, that "those airy shapes, which in her sleep had been so disjoined by imagination, wild work producing, bore some resemblance to their last evening's talk, but with strange addition." The same poet represents dreams, as the product of fancy, exercising her mimic art, in the imitation of reason, who fashions our ideas into regular structures, while this higher power has retired into her private cell when nature rests. This observation also is just and profound, and may serve to account for those wild and grotesque shapes into which our thoughts are apt to shoot forth in dreams. The hardier powers of reason, the will, the memory, are more slightly exerted in sleep, while the lighter ones of conception and imagination, are allowed to operate without their control. In the state of sleep, therefore, imagination released, for the most part, from the sway of reason, memory, or will, collects at her pleasure all the co-

lours with which she delineates her pictures, and mixes and applies them with an unsteady hand. Hence proceed the wildness and extravagance of these pictures. And here it is to be remarked, that according to the theory we have proposed above, the natural result of the state of both body and mind in sleep, is that sensation and imagination should be the principal agents in producing our dreams, while the hardier powers of reason and the will should be nearly or entirely quiescent. For those causes, to which we have just alluded, which acting upon the senses, excite our perceptive powers, and set us to thinking, may easily give rise within us to a train of ideas in regular succession through the imagination; without producing those actions in our bodily organs which always accompany the exercise of reason, recollection or the will. How often do we even in our waking moments, indulge in those trains of ideas which spring up involuntarily in the mind, without exerting in the slightest degree the higher faculties? Is it not probable, then, that those faculties are still less exerted during the torpor brought both upon body and mind in a state of sleep?

In the second place, it is to be observed, that while in general it is true, that the hardier powers of reason, invention, recollection and willing are not exercised in sleep, but fancy is left alone to form her most airy and fantastick shapes, yet there are some exceptions to this rule. If those powers are generally suspended, and our wildest dreams are produced, when imagination is let loose from their rein, yet they sometimes act, and that too with considerable efficiency and effect. Although our memory and judgment may be sometimes so completely inert that in dreaming we seem to converse with our deceased friends, and to have forgotten that they are dead, and to frame in our mind the most ridiculous propositions; yet, at other times, we seem capable of vigorous acts of both these faculties. "Often," says Haller, "in my dreams, I seem to read books, printed poems, histories of travels, &c.

and even see plants of distant regions suited to their climates." Some have been known to solve problems, make verses and deliver speeches, while others, will rise from bed asleep, with their eyes closed, and not only walk about the room or house, going up and down stairs, finding their way readily, and avoiding obstacles, but pass safely through very dangerous places, as windows, or on the roofs of houses. Some somnambuli or sleepwalkers will even execute still more difficult feats. They dress themselves, go out of doors, light a fire, undress and bathe, saddle and bridle a horse, write and execute all the actions of life correctly, and even sometimes acutely. During all this time they are asleep: the eyes are shut, or do not see if opened; and when, they are awakened, which is sometimes not easily effected, they do not remember what they have done.* Now all these facts go to show that there is no operation of the mind of which we are not sometimes capable in sleep. We reason, we recollect, we invent, we will, we put ourselves in motion. These facts tend to prove also that whatever subjects occupied the mind the most deeply when awake, would be most apt to occupy it also in its dreams. This we should expect to be the natural result from the principles before stated by us, in regard to the consentaneous action of the mind and body. For as soon as those actions are produced in our perceptive powers which set the mind to thinking, it would seem natural to expect, that they should be immediately succeeded by those other actions in the bodily organs and mind, to which we were most accustomed. On this account the mathematician, in his dream, will again demonstrate his theorems and problems; the natural philosopher prosecute his arguments from induction; the moralist prescribe the rules of moral duty; the poet indulge his propensity for verse, and the man of business retrace the transactions of his life. Under this

* See Rees' Cyclopedia, Arts. *Dreaming* and *Sleeping*.

view of the subject, nothing could be more natural than that Brutus should have seen either in a sleeping or waking vision, his evil genius, who declared to him, "I am, Brutus, thine evil genius! but thou shalt see me again near Philippi;" or the dream which Shakspeare puts into the mouth of the Duke of Clarence, during his confinement in prison, when with so much beauty and pathos, he represents him as having felt himself to be drowning during the visions of the night. The anxious and perturbed state of mind in which both these persons must have been at the time, would naturally have given rise to such unpleasant visions.

The next phenomenon exhibited in dreaming, which is worthy of remark, is, that confused and obscure world into which, on such occasions, we seem to be introduced. The objects and images are, indeed, all such as are taken from those archetypes which are found in this world, but they are transformed, as by the hand of a magician. We seem to be transported into a fairy land, and something like that which the poets have feigned of the regions below, the place of departed heroes and sages. Objects are presented which deeply interest and agitate us, but they flit before the mind in quick succession, and are at best but dimly seen as through a mist. Does not this circumstance definitively show that our dreams are not merely those thoughts of the soul which are recollected, while the soul is always thinking? If this were the case, would there be this distinction between our perceptions in dreams and when waking? Would the one appear so much clearer, more satisfactory, and more coherent than the others? Is it not evident that the state of the mind, when it is thinking amidst its dreams, is entirely different from that in which it is when waking? In what can this difference consist, but in the alteration produced by sleep in those bodily organs by whose means it performs all its operations? The only way in which this appearance of obscurity and dimness in all our perceptions during sleep, can be account-

ted for, is from the sluggish and inactive state of the body, which renders the mind unable to perform, through its instrumentality, except very inadequately, the operations of thinking.

The next singular circumstance in dreaming is, that strange appearance of reality which attends all our thoughts and conceptions. In our moments of waking, we may form ten thousand imaginations in the mind, paint unnumbered scenes, and sport ourselves with figuring imaginary objects and adventures, and never for a moment, be deluded with any sense of their reality. But in our dreams, our most airy and fantastick figures have a real existence, our chimeras, gorgons and hydras live, the wildest fictions are realised, we take part in the most hazardous adventures, sail in the air, are tossed in tempests upon the ocean, tumble from the tops of houses, and escape with difficulty from volcanoes, earthquakes and inundations. Whence do these airy imaginations derive their impression of reality? May it not be that the same actions and alterations are produced in our bodily organs of perception as if these objects and scenes were really present, and that the reason and judgment, in such cases, are too torpid and inactive to correct the delusions of imagination? In proportion to the feebleness of reason among mankind are they prone to mistake their fantasies for realities. This is one reason why an unenlightened audience is more easily excited and transported out of themselves by the bold figures, and glowing pictures of the orator and the actor, than that which is enlightened. Hence too, when reason, in cases of insanity, is entirely tossed from her throne, the maniac becomes the sport of every wild illusion.

Lastly. We think that the truth of the theory we have stated above, is confirmed by the consideration, that every thing which increases the irritability of the nervous system, increases the tendency of mankind to dreaming. Men of active habits and strong, robust constitutions, unless they be

subject to local disorders, sleep soundly, and are seldom disturbed with dreaming; while the sedentary, the delicate, and the nervous scarcely ever pass a night without this disturbance. This too ought to be expected, if dreams arise, as we have above maintained, in affections of the corporeal organs, because those organs under these circumstances are more easily excited; but if the soul always thinks, and our dreams are merely our recollected thoughts during sleep, why should we be more likely to recollect those ideas which pass through the mind during our repose, when our nervous system is delicate and disordered, than when it is sound and strong?

CHAPTER VIII.

Alienations of Mind, Deliriums, Ecstacies, &c.

A similar solution may be given of other mental phenomena, such as alienations of mind, deliriums, the excitement which leads to somnambulism, ecstacies and trances, idiocy and madness, together with those idle superstitions about spectres and apparitions that so strongly awaken the popular sensibility, and so egregiously abuse the credulity of the vulgar. Alienations of mind are in many cases very singular. A gentleman from the state of New York who had been for some time indisposed, had some business to perform at Norristown, in the state of Pennsylvania. Setting off from home he went to Norristown, transacted the business which was assigned him, received a sum of money from the bank in behalf of a company with which he had some connection, and was just ready to return to his family, when, on a sudden, his mind became disordered. Without any apparent motive he commenced a journey on horseback to Baltimore, of more than an hundred miles; and after remaining a short time in that city, equally without motive, he went from Baltimore to a small town upon Lake Erie, at a distance of more than two hundred miles, travelling too at an inclement season of the year. Upon his arrival at the town upon Lake Erie, being probably greatly fatigued and exhausted, he obtained a refreshing sleep, and upon waking in the morning, appears to have come to his recollection, and

was much surprised to find himself so remote from his family, and in pursuit of no object. He now hastened home, and his health was improved as well as his mind restored to its usual tone. Such an alienation of mind as this could have been occasioned by nothing but disease, which affecting those organs by which the mind performs its operations of reasoning, judging, remembering, and leaving it, without their control, to become the sport of every vain imagination which for the time could take possession. As soon as that irregular action in the system was corrected, the mind returned to the performance of its functions. Dr. Rush, in his excellent work upon the diseases of the mind, relates from Dr. Hunter, the case of a sea-faring man, who from unexpectedly sustaining a heavy loss at sea, was thrown into a total alienation of mind, insomuch that all its powers seemed to be completely suspended. When received into the lunatick asylum at York, in Great Britain, he was in a state of perfect insensibility. For five years he continued in this condition, never expressing any desire for nourishment, so that it became necessary at first, to feed him in the manner of an infant. A servant undressed him at night, and dressed him in the morning; after which he was conducted to his seat in the common parlour, where he remained all day with his body bent, and his eyes fixed upon the ground. From all circumstances of his behaviour, he did not appear to be capable of reflection. Every thing was indifferent to him; and from the fairest judgment that could be formed, he was considered by all about him as an animal converted nearly into a vegetable. In this state he remained nearly five years, when, upon entering the parlour one morning, he saluted the recovering patients with "a good morrow to you all." He then thanked the servants of the house in the most affectionate manner, for their tenderness to him; of which, he said, he began to be sensible some weeks before, but had not till then the resolution to express his gratitude. Talking with

him about what he felt during the suspension of reason, he said that his mind was totally lost; but that about two months before his return to himself, he began to have thoughts and sensations; these, however, only served to convey to him fears and apprehensions, especially in the night time." Here we see an example of a total alienation of mind, from an effect produced, no doubt, upon those organs by which its operations are performed, by a sudden shock occasioned by a great loss at sea.

Deliriums, no doubt, are a species of waking and sometimes sleeping dreams, occasioned by violent actions in the organs, so that our ideas pass through the mind in quick succession, and with so much vivacity as to give them strongly the appearance of reality, insomuch that we sometimes talk in that state, as we do ordinarily about the transactions of life.

Somnambulism, is also a species of dreaming, in which the pictures formed in the mind become so extremely vivid, and assume so much the appearance of reality, that we are stimulated to act under the impression as if awake. Dr. Rush, in the work above referred to, after remarking that in some cases, persons affected in this way, will resume their former occupations, the scholar will return to his studies, the poet to his pen, and the artisan to his labour; relates a singular instance in Dr. Blacklock of Edinburgh. "The Dr.," he informs us, "has been known to rise from his bed to which he had retired at an early hour, come into the room where his family was assembled, converse with them, and afterwards entertain them with a pleasant song, without any of them suspecting that he was asleep, and without his retaining after he awoke, the least recollection of what he had done." A tendency to somnambulism, which is most likely to appear in children of ardent temperaments and delicate constitutions, might I am convinced, be checked and overcome, if duly attended to upon its first appearance. My el-

dest son, when about ten years of age, was in the habit, soon after he had fallen asleep at night, of rising out of bed apparently in great distress, walking about the room in pursuit of some object, of which he would often speak, and sometimes take possession, uttering all the time the strangest and most incoherent language. If spoken to, he would return answers, open his eyes, but remain fast asleep, and with difficulty would be awakened. I always ascribed this appearance to the delicacy of his constitution, which prevented him from perfectly digesting the food that he had received in the day, and whose crudities, of consequence would be more likely to act upon the system, and occasion dreaming immediately after he fell asleep than at any other time. Such tendencies in children should be speedily and effectually checked in the commencement, or they will soon contract habits which it is impossible to subdue. If gentle means will not answer the purpose, more violent ones should be resorted to. I am convinced that men become sleep-walkers and stutterers, only from the want of attention in parents and guardians, in the formation of their habits. In the case of stuttering, I am able to decide from some experience, that harsh expedients should never be adopted.

Ecstasies and trances are to be referred to the same class of phenomena as those beforementioned, and are the result of some singular but irregular actions in the corporeal organs, which more immediately minister to the purposes of thinking. In the discussion of subjects of this nature, we would wish to be considered as referring in all cases to the ordinary, and not the extraordinary, operations of nature. God, who has originally contrived and arranged the whole system, both of the physical and moral world, can surely contravene at his pleasure, those laws which he has established in it, and make any portion of it subservient to his purposes. If it be his will, he surely possesses the power of revealing his designs to mankind by dreams and visions, by ecstasies and trances, and

no doubt he can accompany such disclosures and immediate revelations, with decisive evidences of their being the operation of his hand; insomuch that the person to whom these favours are vouchsafed, cannot entertain a doubt of the divine agency. St. Paul, in his rapture, ecstasy, trance, or heavenly vision, call it what we may, seems to have been sure that Paradise was unfolded to him, in which he distinctly perceived those joys which eye hath not seen, nor ear heard, and of which it hath not entered into the heart of man to conceive; but he does not appear to have been certain, whether this revelation was made to him while his soul was within or without the body. Now, no rational man can doubt, that he who is the great Fountain of light and knowledge, could have shed abroad such light through the spirit of the blessed Apostle; and of this miraculous communication to him, he gave sufficient demonstration in his works, the only authentic seals of a divine mission. That God also during the progress of the Patriarchal, Mosaic, and Christian dispensations did make known his counsels, as well by dreams, visions, and immediate illapses of his spirit, as by signs and wonders innumerable, none but infidels disbelieve. But we are speaking at this time, not of the miraculous but the ordinary operations of nature. The first ceased as soon as the necessities of the Church no longer demanded their continuance, the last will be as permanent as the system of the universe. Those ecstacies, trances and visions, which are now witnessed in the world, may be explained upon the same principles upon which we have before endeavoured to account for dreams, delirium and somnambulism. Medical treatises are full of recitals of the effects which are produced upon the human mind by fear, joy, despair, grief, and all the strongest passions. In the case before referred to of the sea-faring man, we have seen despair, by a sudden shock, suspend all the powers of the mind, and deprive its victim of every attribute that distinguishes the human race, except

the functions of animal life. Fear, joy, grief, have an equally powerful operation, leading the subjects of their influence to a train of diseases, and even to madness and death. Now, let us suppose, that a christian soul who has lived a life of indifference to religious duty, or even of positive and atrocious guilt, is, from some circumstance, suddenly awakened to a pungent sense of his guilt and wretchedness, and of the extreme danger to which he was exposed in a state of impenitence. Is there any thing wonderful or even extraordinary, if in such a case, religious terror seizing upon the mind, so operates upon the organs of the body by which it acts, as to produce a strange and disordered action in the whole system, absorb the whole energy of the soul to itself, and suspend all the powers of it save those which are exercised in its religious feelings? Such states of ecstasy, trance or rapture, are as naturally the result of excessive religious fear or joy, as those which are produced by any other strong passion or emotion. In this state of excitement, no other ideas float through the mind but those which relate to God, the Saviour, the joys and pains of futurity. If the penitent soul is just smitten with contrition, alarmed for his safety, and stung with a sense of guilt, his reflections are sad and gloomy, if he is conscious of having obtained pardon and made his peace with God, his ecstasy translates him to heaven, and unfolds to him all its glories and beatitudes. Nothing can be more natural than all results of this kind. There is no necessity for supposing the immediate and miraculous interference of God on such occasions, as these are effects which flow from the operation of principles known to exist in the constitution of human nature.

Idiocy may arise from some original defect in the nature and properties of the mind, or what is more probable, from a mal-conformation and adjustment of the component parts of the body, and more especially, of those parts which are made use of by the mind in discharging its higher func-

tions, as of reason, judgment and volition. Idiots never know how to reason, reflect, or judge, and the ideas which they have are very confused and indistinct. The whole machinery of the body, in this case, appears to be defectively constructed, and the mind embarrassed and impeded in all its functions. Madmen, on the other hand, it would seem, have all the powers of their nature in full perfection, but from a great variety of causes, a deranged action is introduced into them, and an incalculable variety of singular phenomena are exhibited. While idiots are almost entirely destitute of ideas, or have their minds occupied only with the most crude and misshapen conceptions, and are utterly incapable of any intellectual exertion, madmen are not unfrequently seen, to discover no common share of ingenuity and acuteness. While their heads are filled with the wildest conceptions, and the most ridiculous chimeras usurp the possession of them, they are still capable of exercising the faculties of judgment, reasoning, invention, and a variety of talents. One supposes himself to be a goose, a cock, a dog, or a cat, and he imitates those animals in his voice and gestures; another, that he has died, and he stretches his body and limbs upon a bed, or a board, and assumes the stillness and silence of a corpse. A third, who was a prince of the house of Bourbon in France, imagined himself a plant, and placed himself in the garden in order to be watered; while a fourth, is fully impressed with a conviction, that he is a king, assumes the air and port of majesty, and demands from all around him the homage due to a sovereign. In all these cases, they appear capable of deducing just inferences from false principles. The wildness, extravagance and absurdity of their pretensions, are not a little remarkable. A young man in the Philadelphia hospital, as we are informed by Dr. Rush, was impressed with a full conviction that he was once a calf, and mentioned the butcher's name who had slaugh-

tered him; another felt equally assured, that he had a wolf within him, which was devouring his liver.

Several imagined themselves the Messiah, or assumed the character and claims of the three persons of the Trinity. A clergyman of Elizabethtown, in New Jersey, while upon every other subject, he was a rational and intelligent man, and was regarded by his flock as a very able and successful preacher, had his mind so disordered with the expectation of the millenium, that it deprived him of his character and influence as a Pastor. On one occasion, so satisfied was he of the truth of his calculation from the Scriptures, that he gave public notice from his pulpit, of the day and hour, in which the coming of Christ was to take place, and invited his congregation to assemble in the church, for the purpose of meeting their Saviour. Many of them did so, some attracted by that curiosity so natural on such occasions, and others not a little anxious and alarmed, lest his prediction should be accomplished. Detecting the error of his calculations, undeceived the people as to the character and pretensions of their pastor, but never cured his insanity, for he continued to be affected with the same or similar derangement to the end of life. I myself was acquainted with a young man, who lived at that time in the city of Philadelphia, and was in the habit of frequenting some of the best company, who, after I had known him for a short time, and looked upon him as a sensible and well-informed youth, one day desired to speak to me in private in my study. Somewhat surprised at the request, I yielded to his proposal, and conducted him into my study, when he communicated to me, what he considered as a very important secret, viz. that he was the son of general Washington. Astonished at the intelligence, I knew not at first what to think, and began strictly to interrogate him about the particulars of his birth. He had contrived to frame a very coherent and plausible story, mentioned an English lady of rank as his mother, who I had

reason to believe had been in habits of intimate acquaintance with general Washington's family; but when he came to describe the particulars of the striking resemblance between himself and our president, and the honours, which on some occasions had been paid him by the military, who recognized those resemblances, his derangement stood revealed to me. In every other matter, this young man was intelligent and respectable. The object of this youth in speaking to me upon the subject, was, that he might be introduced to Judge Bushrod Washington, the relative and heir of the president, and through his means, obtain his portion of the family estate, and have his rank and dignity acknowledged by the American nation. Here we again perceive that his error lay in his principle, and not in the consequences which he deduced from it. It would seem, from facts of this nature, as if the human mind, by dwelling habitually upon any one object, whether that object awakes either very strong apprehension and pain, or very anxious desire, may, at length, become completely disordered about it, may bring itself to believe that its fears or its hope, will surely be realised. If ambition was the ruling passion of the maniac, and blasted expectations disarranged the powers of his understanding, his irritated spirit either writhes with inward anguish, or finds its solace in forming a visionary fabric of its own greatness, and in imagination he becomes a hero, a prince, or a king. If disappointed love has driven him to madness, he spends his time in moping melancholy, or if he have any talent for poetry, in pouring forth his sorrows in regular numbers. Avarice in the maniac displays itself, in his supposing himself possessed of inexhaustible wealth, or in perpetual lamentations at the prospect of coming to poverty; while that insanity, which is brought on by excessive indulgence of the passions, or by the perpetration of atrocious guilt, often inflicts upon the miserable sufferer a dreadful penalty, he endures even in this world all the horrors of

the damned, feeling himself, in the language of the poet, "bound upon a wheel of fire." The wretched sufferers in a mad-house, while they awake all our best sympathies in their behalf, and merit all the succours which humanity prompts us to extend to them, should furnish us with awful admonitions, against giving too loose a reign to the passions. Anger rendered one of the kings of France insane, and our hospitals are filled with the victims of revenge, grief, despair, inordinate ambition, inextinguishable avarice, and uncontrolled lust.

There is one more circumstance only in reference to madness, which is particularly worthy of the attention of philosophy. Dr. Rush was frequently surprised to find, that madness often led to the development of talents, which had never appeared before. "The records of the wit and cunning of madmen," says the Dr., "are numerous in every country. Talents for eloquence, poetry, music, and painting, and uncommon ingenuity in several of the mechanical arts, are often evolved in this state of madness. A gentleman, whom I attended in our hospital in the year 1810, often delighted, as well as astonished the patients and officers of our hospital, by his displays of oratory, in preaching from a table, in the hospital yard every Sunday. A female patient of mine, who became insane after parturition in the year 1807, sang hymns and songs of her own composition, during the latter stage of her illness, with a tone of voice so soft and pleasant, that I hung upon it with delight, every time I visited her. She had never discovered a talent for poetry nor music, in any previous part of her life. Two instances of a talent for drawing, evolved by madness have occurred within my knowledge. And where is the hospital for mad people, in which elegant and completely rigged ships, and curious pieces of machinery, have not been exhibited by persons who never discovered the least turn for a mechanical art, previously to their derangement? Sometimes we observe in

mad people, an unexpected resuscitation of knowledge; hence we hear them describe past events, and speak in ancient or modern languages, or repeat long and interesting passages from books, none of which, we are sure, they were capable of recollecting, in the natural and healthy state of their mind."

These effects are, undoubtedly singular, but may be accounted for upon the ordinary principles of human nature, and are reconcileable with its ordinary laws. These very circumstances, it is probable, gave rise to that ridiculous superstition with which some barbarous nations regard madmen. Seeing new powers of mind and body developed by insanity, and being unable from their ignorance of human nature to account for it, they were easily led to believe that such persons received these unexpected powers by supernatural agency. But surely madness can confer no new faculty or talent upon mankind. The utmost that those changes in the corporeal and mental system which are produced by madness, would seem capable of, is to give excitement to the mind, and call into exercise those faculties, which without this exciting cause would have lain dormant. Dr. Rush has undertaken to show that the proximate cause of madness, is in the blood vessels of the brain; and he has furnished very powerful arguments in support of his theory. Whatever may be the immediate cause, it is certain, that great changes are produced in the brain by this greatest infirmity of our nature. A new and violent action is effected in those organs of the body, that more immediately minister to the highest operations of the mind. May not this action, dreadful and violent as it is, set all the powers of the mind into strenuous operation, and thus disclose to us many talents that otherwise would forever have been buried in oblivion, as a volcano or an earthquake in the natural world discloses to us many precious materials which are concealed in the bowels of the earth? We are assured that some unusual and most

violent agitation, such as is occasioned by the stronger passions almost always occasions insanity, and it is more than probable that the same kind of irritation continues it. The talents which are evolved in a state of madness, by the excitement of the mind, reveal to us one other of the secrets of nature, viz. how large a proportion of the finest talents among mankind, lie in a dormant state, and are never disclosed to the world, for the want of those exciting causes that stimulate them into action; although I am inclined to think, that it is not they whose minds are of ordinary or vulgar structure, who usually become insane. Madness is more apt to result from over-wrought sensibility and refinement of feeling, than from dull and sluggish perceptions; and I feel convinced in my own mind, that if the matter could be accurately tested and fully ascertained, our mad-houses would be found to be inhabited by many of the choicest spirits of the nation, but spirits which have exhausted their energy in eating out their own peace, and by the tempests which their passions excite, throwing their systems into confusion and wild uproar.

The only phenomena, under this head which remain to be explained, are, those of spectral visions and apparitions, which, even at this enlightened age, to the disgrace of mankind, have popular belief on their side. Nothing can be more absurd and ridiculous than such credulity, and yet there is nothing to which mankind seem to discover a more violent propensity to give credence, and upon which their superstition is more unconquerable. The only fact recorded in the sacred writings, which would seem to furnish any countenance to a superstition of this kind, is that which relates to Saul and the witch of Endor, who undertook by magical incantations to raise Samuel from the dead. In regard, however, to this transaction, it appears evident from the recital, when all its parts are viewed in connection, that in the true spirit of her art, she practised a gross imposition upon Saul. The cry which this sorceress uttered upon the pretended appearance

of Samuel, her feigned discovery of the person of her king, with which no doubt she had been before acquainted, the wily questions and answers which were represented, perhaps, by the power of ventriloquism, as proceeding from Samuel, whose ghost Saul does not see during the whole conversation, the bold prophecies which she hazarded, trusting to her knowledge of all the facts, exhibit in a strong point of view the address and artifice of this necromancer, or dealer with familiar spirits, and the weak credulity with which Saul, in his state of despondency and discomposure of mind, allowed himself to be duped.

This transaction, therefore, as related in holy scripture, when justly interpreted and rightly understood, gives no support to those idle superstitions so prevalent among the vulgar, about ghosts and apparitions. It shows nothing more than that there were among the Jews, as among other nations, a set of persons who made it their trade thus to tamper with the ignorance and credulity of the people.

Considering the scriptures, then, in this matter, as not interfering with or superseding the speculations of philosophy, we proceed to account, upon the known and acknowledged principles of the science of the human mind, for those deceptions of the senses which have given rise to the belief in spectral visions and apparitions. We have already shown in our previous disquisitions, that in every case in which there is perception, through the instrumentality of the external organ of sense, there is always some action produced in that organ. Whether that action be a vibratory motion of the nerves, as Hartley imagines, or a longitudinal motion, or any other of which we can form no conception, we are unable to decide. Now, if we suppose it to happen that this action should from any circumstances, or the operation of any causes whatever, be produced in the system when the object is not present, the same effect will be produced upon the mind as if it were, and it will appear to be present. This

action, however, never takes place irregularly, in a sound and healthful state of the organs, but only through the influence of disease or a delicate condition of the nervous system, brought on by sedentary habits, by watchfulness and solicitude, too intense application of mind to any subjects unusually interesting, or by intemperance and excessive indulgence of the passions. Those sounds which infest the ears of all of us, and particularly upon the approach of a cold or catarrh, can be occasioned in no other way but by such an effect being produced upon the auditory nerves, as if those nerves had really been affected by undulations of air. In a similar manner we may account for those noises which are heard by persons of a gloomy and superstitious temperament, which they consider as ominous and prognosticating their death, as well as those blows which they not unfrequently suppose themselves to have felt upon different parts of the body, and to which a timid imagination too readily affixes some secret meaning. Those who are weak enough to allow such apprehensions to disturb their peace, may be assured that their fears are visionary, and that heaven will not be likely to resort to such fantastic expedients as these, expedients unworthy of its dignity, to communicate to mankind that knowledge about futurity which it has so sedulously, and for the wisest purposes, concealed from his most eager curiosity, and most profound research.

All spectres, ominous sounds, unusual sights, apparitions and hob-goblins, that are prone to haunt church-yards and gloomy recesses, we may be assured exist only in our perceptions. When the constitutions of men are destroyed by the intemperate use of ardent spirits, or the indulgence of illicit love, strange sights have infested their vision, produced beyond all doubt, by that irregular and anomalous action, introduced into the nervous system by such excesses. As we have seen that the body is sometimes made to act upon and influence the mind, so the mind in its turn has a reciprocal

influence upon the body. Let, then, any object be presented to a timid imagination, which is calculated to excite its superstitious fears; as for instance, that kind of light which in damp and unwholesome places sometimes makes its appearance, and is denominated an *ignis fatuus*; and immediately amidst the gloom of night, the mind of the beholder, excited by superstitious terrors, produces the same effect upon the visual organs, as if some terrible figure was presented to the eye, and he sees a living monster or hobgoblin, with eyes, mouth, head, and distorted limbs, threatening to devour him. Dr. Samuel Smith, late president of Princeton College, in his 7th lecture upon Moral Philosophy, enumerates several very curious instances of spectral visions of this nature, and very judiciously explains them all upon principles, similar to those which we have just propounded. "A young lady," he informs us, "who was peculiarly susceptible of impressions of fear in the dark, had attended the funeral of a friend who had died with the small-pox. Waking suddenly the night afterwards from sleep, she discerned, by the light of the moon, which faintly illuminated her chamber, a white robe hanging on the back of a chair and a cap placed on the top. Her disturbed imagination soon converted the object before her into the image of her deceased friend, just as she was dressed to be laid in her coffin, and, as she declared afterwards, when the whole delusion was revealed to her, she was sure that she recognised every feature of her friend, and even the pits of the small-pox, with which she died, in her face." Here we see out of what rude outlines, presented by nature, an agitated mind formed a complete and terrible picture. "A man," continues the Dr., "who had reduced himself by intemperance to very distressing nervous irregularity, was continually disturbed by visions, sometimes of the most frightful, and sometimes of the most fantastic kind. He would hear strange voices, would ask and answer questions, as if engaged in conversation with vi-

sionary personages; so that the baron Von Swedenborg, in his most visionary moments, was never surrounded by more extraordinary assemblages of strange sights." These facts, together with the story of Lord Lyttleton's vision of his mother, who announced to him his approaching end but a few days before he died, together with several others of a similar nature, Dr. Smith very justly and philosophically ascribes to nervous excitement.

But the most complete series of facts which I have ever seen assembled together on this subject, and which, in truth, may be regarded as a course of moral experiments upon it, as perfectly satisfactory to the mind, as those of Cheselden, beforementioned, were, in regard to vision and the original perceptions of sight, are contained in the following statement, which is extracted from a German publication.

"M. Nicolai, a member of the Royal Society of Berlin, some time since presented to that institution, a memoir on the subject of a complaint with which he was affected; and one of the singular consequences of which was, the representation of various spectres or apparitions. M. Nicolai for some years had been subject to a congestion in the head, and was bled frequently for it by leeches. After a detailed account of his health, on which he grounds much medical, as well as psychological reasoning, he gives the following interesting narrative.

"In the first two months of the year 1791, I was much affected in my mind, by several incidents of a very disagreeable nature; and on the 24th of February, a circumstance occurred which irritated me extremely. At ten o'clock in the forenoon, my wife and another person came to console me; I was in a violent perturbation of mind, owing to a series of incidents, which had altogether wounded my moral feelings, and from which I saw no possibility of relief, when suddenly I observed at the distance of ten paces from me, a figure, the figure of a deceased person. I pointed at it, and

asked my wife whether she did not see it. She said nothing, but being much alarmed, she endeavoured to compose me, and sent for the physician. The figure remained some seven or eight minutes, and at length I became a little more calm; and as I was extremely exhausted, I soon after fell into a troubled kind of slumber, which lasted for about half an hour. The vision was ascribed to the great agitation of mind in which I had been, and it was supposed that I should have nothing more to apprehend from that cause; but the violent affection having put my nerves into an unusual state, from this arose further consequences, which require a more detailed description.

“ In the afternoon, a little after four o’clock, the figure which I had seen in the morning again appeared. I was alone when this happened; a circumstance which, as may be easily conceived, could not be very agreeable. I went therefore, to the apartment of my wife, to whom I related it. But thither also the figure pursued me. Sometimes it was present, sometimes it vanished; but when seen it was always the same standing figure. A little after six o’clock, several stalking figures also appeared; but they had no connexion with the standing figure. I can assign no other reason for this apparition, than that, though much more composed in my mind, I had not been able so entirely to forget the cause of such deep and distressing vexation, and had reflected on the consequences of it, in order, if possible, to avoid them; and that this happened three hours after dinner, at the time when the digestion just begins.

“ At length I became more composed, with respect to the disagreeable incident which had given rise to the first apparition; but though I had used very excellent medicines, and found myself in other respects perfectly well, yet the apparitions did not diminish; on the contrary, they rather increased in number, and were transformed in the most extraordinary manner.

“ After I had recovered from the first impression of terror, I never felt myself particularly agitated by these apparitions, as I considered them really to be the extraordinary consequences of indisposition. On the contrary, I endeavoured as much as possible to preserve my composure of mind, that I might remain distinctly conscious of what passed within me. I observed those phantoms with great accuracy, and very often reflected on my previous thoughts, with a view to discover some law in the association of ideas, by which exactly these or other figures might present themselves to the imagination. Sometimes I thought I had made a discovery, especially in the latter period of my visions; but, on the whole, I could trace no connexion which the various figures, that thus appeared and disappeared to my sight, had with my state of mind, or with my employment, and the other thoughts which engaged my attention. After frequent accurate observations on the subject, having fairly proved and maturely considered it, I could form no other conclusion on the cause and consequence of such apparitions, than that when the nervous system is weak, and at the same time too much excited, or rather deranged, similar figures may appear in such a manner, as if they were actually seen and heard; for these visions in my case, were not the consequence of any known law of reason, of the imagination, or other usual association of ideas; and such also is the case with other men, as far as we can reason from the few examples we know.

“ The figure of the *deceased* person never appeared to me after this dreadful day: but several other figures showed themselves afterwards very distinctly; sometimes such as I knew, mostly, however, of persons I did not know; and among those known to me, were the semblance of both living and deceased persons, but mostly the former; and I made the observation, that acquaintance with whom I daily conversed, never appeared to me as phantoms; it was always such as were at a distance. When these apparitions had

continued some weeks, and I could regard them with the greatest composure, I afterwards endeavoured, at my own pleasure, to call forth phantoms of several acquaintance, whom I for that reason represented to my imagination, in the most lively manner, but in vain; for however accurately I pictured to my mind the figures of such persons, I never once could succeed in my desire of seeing them externally; though I had some short time before seen them as phantoms, and they had, perhaps, afterwards unexpectedly presented themselves to me in every case involuntarily, as if they had been presented externally, like the phenomena in nature, though they certainly had their origin internally; at the same time I was always able to distinguish with the greatest precision, phantoms from phenomena. Indeed I never once erred in this, as I was in general perfectly calm and self-collected on the occasion. I knew extremely well, when it only appeared to me that the door was opened, and a phantom entered, and when the door really was opened, and any person came in.

“ It is also to be noted, that these figures appeared to me at all times, and under the most different circumstances, equally distinct and clear. Whether I was alone or in company, by broad day-light, or in the night-time, in my own, or in my neighbour’s house; only when I was at another person’s house they were less frequent: and when I walked the street, they very seldom appeared. When I shut my eyes, sometimes the figures disappeared; sometimes they remained, even after I closed them. If they vanished in the former case, on opening my eyes again, nearly the same figures appeared which I had seen before.

“ I sometimes conversed with my physician and my wife, concerning the phantoms which at the time hovered round me; for in general the forms appeared oftener in motion than at rest. They did not always continue present; they frequently left me altogether, and again appeared for a short or a

longer space of time, singly or more at once; but in general, several appeared together. For the most part, I saw human figures of both sexes; they commonly passed to and fro as if they had no connexion with each other, like people at a fair when all is bustle, sometimes they appeared to have business with one another. Once or twice I saw among them persons on horseback, and dogs and birds; these figures all appeared to me in their natural size, as distinctly as if they had existed in real life, with the several tints on the uncovered parts of the body, and with all the different kinds and colours of clothes. But I think, however, that the colours were somewhat paler than they are in nature.

“None of the figures had any distinguishing characters; they were neither terrible, ludicrous, nor repulsive; most of them were ordinary in their appearance; some were even agreeable.

“On the whole, the longer I continued in this state, the more did the number of phantoms increase, and apparitions become more frequent. About four weeks after, I began to hear them speak; sometimes the phantoms spoke with one another; but for the most part they addressed themselves to me, and endeavoured to console me in my grief, which still left deep traces in my mind. This speaking I heard most frequently when I was alone, though I sometimes heard it in company, intermixed with the conversation of real persons; frequently in single phrases only, but sometimes even in connected discourse.

“Though at this time I enjoyed rather a good state of health, both in body and mind, and had become so very familiar with these phantasms, that at last they did not excite the least disagreeable emotion, but, on the contrary, afforded me frequent subjects for amusement and mirth; yet as the disorder greatly increased, and the figures appeared to me for whole days together, and even during the night, if I hap-

pened to be awake, I had recourse to several medicines, and was at last again obliged to apply leeches.

“This was performed on the 20th of April, at eleven o’clock in the forenoon. I was alone with the surgeon; but during the operation, the room swarmed with human forms of every description, which crowded fast one on another: this continued till half past four o’clock, exactly the time when the digestion commences. I then observed that the figures began to move slowly; soon afterwards the colours became gradually paler, and every seven minutes they lost more and more of their intensity, without any alteration in the distinct figure in the apparitions. At half past six o’clock all the figures were entirely white, and moved very little, yet the forms appeared perfectly distinct; by degrees they became visibly less plain, without decreasing in number, as had often formerly been the case. The figures did not move off, neither did they vanish, which also had usually happened on other occasions. In this instance they dissolved immediately in air: of some, even whole pieces remained for a length of time, which also by degrees were lost to the eye. At about eight o’clock there did not remain a vestige of any of them, and I have never since experienced any appearance of any kind. Twice or thrice since that time I have felt a propensity, if I may be so allowed to express myself, or a sensation as if I saw something, which in a moment again was gone. I was even surprised by this sensation whilst writing the present account, having, in order to render it more accurate, perused the papers of 1791, and recalled to my memory all the circumstances of that time. So little are we sometimes, even in the greatest composure of mind, masters of our imagination.”

This account ought to be perfectly conclusive, as to the true theory about phenomena of this nature, and ought forever to put a stop to all superstitious delusions in regard to spectral visions and apparitions. A curious query concern-

ing it, however, seems naturally to arise in the mind. Could M. Nicolai, although afflicted with the same complaint, ever have experienced the same visions, if he had been born blind? We are assured that he could not, but we may deduce from these facts this useful and important reflection. It is evident, that in our perception of the outward objects of sight, by the action of the rays of light upon the nervous coat and the brain, there is some change produced upon the mind, which enables it afterwards to occasion those objects to appear to be present when they are really not so, although without this previous action upon the mind, it could not have a single perception of the kind. Had M. Nicolai been blind from his birth, not one of these spectres could have been exhibited to him. Our perceptions, therefore, must in all cases commence in the action of outward objects upon the senses.

But besides furnishing us with a key that completely opens the door to all mysteries of this kind, from experiments of this nature, I conceive we may arrive at a solution of two very singular facts which are upon record, and, of course, of all events of a similar description; I mean the circumstances which led to the conversion of Constantine, the first Roman emperor who embraced christianity, and of colonel Gardiner, a distinguished English officer, in more recent times. We shall state the facts which are related in both these cases, and with a few remarks about them shall conclude this article.

As the emperor Constantine the Great was on his march to attack Maxentius, his rival in the Roman empire, he is said to have been led to embrace christianity by a miraculous cross displayed to him in the air at noon day, with this inscription upon it, "hac vince," under this conquer.

Without supposing with some writers that this miraculous appearance of the sign of the cross, was a mere fiction of Constantine, resorted to as an artifice by which to animate his troops to the contest which was approaching, or with-

Dr. Mosheim, the learned author of the ecclesiastical history, that it was displayed to the emperor only in a dream, when he himself solemnly averred, as we are informed by Eusebius, that it took place in the presence of the whole army; may we not relieve ourselves from the difficulties which have been raised during the controversy about this matter, by concluding that the emperor was himself deceived in the phenomenon which presented itself on that occasion to his view? His mind must have been in a state of deep solicitude and suffering, not only about the general affairs of the empire, which were in extreme confusion and danger, but more especially about the result of his approaching battle with Maxentius. His fate and that of the empire hung upon the issue of that contest. Agitated and disquieted from conflicting emotions, probably many days had been spent amidst toils and anxiety, and his nights in sleepless vigilance. Religion too, it seems, had some considerable share in his meditations. The contest raged between the pagans and christians. They pursued each other in a spirit of extermination. Constantine had as yet declared himself in favour of neither side. He was anxiously reflecting upon the matter. In this state of mind it would be by no means unexampled, if any extraordinary appearance in the heavens, a solar halo, or a cloud singularly shaped and strongly illuminated by the beams of the sun, had been mistaken by him for a miraculous cross, and when nature presented to him the outlines, imagination could easily fill up the details, so that the inscription upon the cross, *hac vince*, like the pits of the small-pox in the face of the lady beforementioned, may have been distinctly perceptible. This solution of the matter would at once exonerate the emperor from the charge, not only of inventing a falsehood to accomplish a great purpose at the time, but from the still deeper guilt of coolly and solemnly persevering in declaring it as a fact; and at the same time account for the circumstance which has

been mentioned as a difficulty in the case, viz. that although Eusebius lived in the time of Constantine, and might have heard the story from many other persons belonging to that army, who were alleged to have been present, yet he rests it solely upon the testimony of the emperor. It is more than probable, that whatever may have been the celestial appearance exhibited to the army, none of them saw it in the same light with their emperor.

CHAPTER IX.

The same Subject Continued.

WHATEVER we may be disposed to think of the fact related, concerning the conversion of Constantine, the Roman emperor to Christianity, and I have thrown out the explanation given in the last chapter, merely as a conjecture; in regard to the circumstances, which are said to have attended that of colonel Gardiner, I think no rational mind should hesitate in forming a most decided opinion. The facts, as stated by Dr. Doddridge, in his life of that officer, are the following. "This memorable event, (his conversion) happened towards the middle of July, 1719; but I cannot be exact as to the day. The colonel had spent the evening, and, if I mistake not, it was the Sabbath, in some gay company, and had an unhappy assignation with a married woman, of what rank or quality I did not particularly inquire, whom he was to attend exactly at twelve. The company broke up about eleven, and not judging it convenient to anticipate the time appointed, he went into his chamber to kill the tedious hour, perhaps, with some amusing book, or some other way. But it very accidentally happened, that he took up a religious book, which his good mother or aunt, had, without his knowledge, slipped into his portmanteau. It was called the "Christian Soldier, or Heaven taken by Storm." Guessing by the title of it, that he should find some phrases of his own profession spiritualized, in a manner which he thought, might afford him some diversion, he resolved to dip into it; but he took no serious notice of any thing he read in it; and yet, while this book was in his hand, an impression was made

upon his mind, perhaps, God only knows how, which drew after it a train of the most important consequences. There is, indeed, a possibility, that while he was sitting in this attitude, and reading in this careless and profane manner, he might suddenly have fallen asleep, and only dreamt of what he apprehended he saw. But nothing can be more certain than that when he gave me this relation, he judged himself to have been as broad awake during the whole time, as he ever was in any part of his life; and he mentioned it to me several times afterwards, as what undoubtedly passed, not only in his imagination, but before his eyes.

“He thought he saw an unusual blaze of light, fall on the book while he was reading, which he at first imagined might happen by some accident in the candle. But lifting up his eyes, he apprehended to his extreme amazement, that there was before him, as it were, suspended in the air, a visible representation of the Lord Jesus Christ upon the cross, surrounded on all sides with a glory; and was impressed as if a voice, or something equivalent to a voice, had come to him to this effect, for he was not confident as to the very words; “Oh! sinner, did I suffer this for thee, and are these the returns?” But whether this were an audible voice, or only a strong impression on his mind equally striking, he did not seem very confident; though to the best of my remembrance, he rather judged it to be the former. Struck with so amazing a phenomenon as this, there remained hardly any life in him, so that he sunk down in the arm-chair in which he sat, and continued, he knew not exactly how long, insensible; which was one circumstance that made me several times take the liberty to suggest, that he might possibly be all this while asleep, but however that was, he quickly after opened his eyes, and saw nothing more than usual.”

The circumstances here related, were the immediate cause of that happy change which took place afterwards in the character and conduct of Col. Gardiner, when, from having been

a profligate in morals, and a scoffer at religion, he became a sincere and truly exemplary christian. That he really believed in this case he had received a supernatural warning from heaven, and a miraculous display of divine power, there can be little doubt, as he always continued through life to express himself to that effect; but that he was entirely mistaken in his conceptions about the matter, ought scarcely to be made a doubt among those who are in the slightest degree acquainted with the operations and laws of nature. If Col. Gardiner had the body of the Saviour really exhibited to him surrounded by a blaze of glory, and heard a voice addressing him, it was a miracle of a piece with that which was wrought in the conversion of St. Paul, when on his way to Damascus, he saw a light from heaven, shining round about him, above the brightness of the sun, and at the same time, heard a voice saying unto him, Saul, Saul, why persecutest thou me? Now, upon those principles of science which we have before established, before we should give credit to the testimony of Col. Gardiner, when he alleges that a miraculous interference of heaven was operated in his behalf, we should require of him to prove it by the same evidence which was exhibited by the Apostle, the evidence of miracles, the only evidence upon which such allegations can ever be well substantiated. That Col. Gardiner had a most happy reformation produced in his conduct by this transaction, is not to be denied, and a subject of congratulation and rejoicing, we trust to Angels as well as men; but his change of habits did not prove that any thing extraordinary took place, since the same alteration in his views and deportment would have been produced by his belief that he was supernaturally warned. Far be it from us, to attempt to limit the means which may be employed by divine grace, to effect the everlasting salvation of men. It may accomplish this beneficial purpose as well by their delusions as just apprehensions of things. In general, however, it is worthy of remark, that we have no

sufficient reason to believe that the Creator, in accomplishing his purposes of mercy and grace, ever departs from the ordinary course of his providence, except for the attainment of extraordinary ends, and in all such cases he never fails to deal with us as rational and intelligent beings, and furnishes our understandings with satisfactory proofs of his immediate interference. It is much to be regretted, when the sentiments of religion among mankind are allowed to be tinctured and debased by superstition. Religion never yet derived any advantage, but the most serious mischief, from her connection with superstition, and never will derive any. One half the infidelity which has prevailed in France for some centuries past, may be ascribed to the errors in doctrine, the mummeries and superstitious observances in practice of the church of Rome. By these means a prejudice is excited in the minds of intelligent and reflecting men against christianity itself, in as much as they have not learnt to separate in their imagination, the pure and holy religion of the Saviour, from that monstrous mass of absurdities and follies, under which, as a disguise, it invariably presents itself to their view. In our happy country, let us endeavour to obtain the pure and heavenly religion of the Saviour, undefiled by the errors and misconceptions of fanaticism and superstition.

With these preliminary observations to guard against a misconstruction of our motives and object, we proceed to show in what manner Col. Gardiner might have been mistaken; in his conceptions about the facts that led to his reformation. He appears, from the account which is given of him by Dr. Doddridge, to have been a man of strong natural parts and ardent sensibilities; and however at an early period of life, he outraged by his conduct the precepts of christianity, to have been by no means able to stifle the impressions of religion, which he had received in early life from a pious mother and aunt. The seeds which they had sown in his heart, he could never entirely eradicate amidst his

greatest irregularities, for they found a happy soil in which to shoot forth in his natural temperament and dispositions. He is repeatedly overtaken by remorse and terror, amidst his career of guilt and folly. The apprehensions of religion for a time take possession of his mind, but are soon again allayed by the charms of sensual pleasure, or the ridicule of his licentious companions. With a mind thus subject to occasional paroxysms of apprehension and disquietude about the interests of his immortal part, dissatisfied with the career in which he was engaged, but so enchained by sin as to be unable to extricate himself, we find him, on this occasion, engaged in profane revelry with his associates, and having entered into a criminal assignation, and that too in violation of the most sacred rights of his neighbour, waiting with the full purpose of adding to all the other sins that weighed upon his conscience, the foul crime of adultery. Passing from the scene of banqueting and merriment, heated with wine and surfeited with food, he determines to spend the hour which was left him for reflection, in reading some author whose sentiments should accord with his present feelings, who should encourage him in his criminal pursuits by fortifying his mind with the doubts of sophistry, or stimulating his passions by unholy pictures. He opens his portmanteau to obtain an author suited to his purpose. Instead of meeting with such a production as he desired, he finds a religious treatise. The view of it gives him a sudden shock, and a new train of reflection passes rapidly through his mind, his former and half-extinguished fires of remorse are excited. He resists them, as much as possible, and in order to stifle the painful emotions which were springing up, he determines to make a sport even of sacred things. He commences reading with this profane view. His ideas, however, in spite of himself begin now to run in a new channel. He thinks of the interests of his immortal spirit, of the redemption of the Saviour, of his own guilt and miserable prospects in future.

The contrast between his emotions, while engaged in banqueting and merriment a few moments before, and his present train of reflections, only brings more pungently home to his bosom those serious and solemn truths he is now contemplating. Overcome, however, with heaviness from his previous feast, if he does not fall into a complete sleep, he sinks into that unconscious state of being, in which the senses are partially closed against the impressions of outward objects, and in which, if the soul be not infested with dreams, it reposes for a moment from its unceasing toil of thinking. In this unconscious state he remains a short space, but suddenly awakes; and in that state of alarm and trepidation which we all experience when suddenly roused from a state of slumber. In this alarmed state of the mind, when its fears alone possess it, and reason has not power to come in to its aid, and support him by its sceptical doubts and difficulties, the train of reflections upon the subjects of religion, into which, in spite of his endeavours, he had been thrown by his book, rush suddenly upon the mind. His half opened eyes, makes the light of the candle assume the appearance of an unusual blaze, as all of us have experienced at times when suddenly awaking. The wholesome fears of religion are soon converted into superstitious terrors. He imagines he perceives a supernatural light, and is chilled with indefinable horrors. His mind is now confused, and in its agitation occasions an unusual excitement and irregular action of the nervous system. The same effect is produced upon the optick nerves and the ear, as if the image of Christ upon the cross was before his eye, and sounds assailed his ear.

This is the account which philosophy can give of this matter, and I am inclined to think the true one. There is nothing more difficult in conceiving Col. Gardiner thus to have been deceived in the agitation of his mind, than in conceiving the manner in which the lady at Trenton could suppose

her friend whom she had lost to be immediately before her, and that she traced the very pits of the small-pox in her face. The claims of lord Lyttleton to having seen his mother, who foretold the time of his death, are as good as those of Col. Gardiner, to having seen the image of his Saviour, and having heard a supernatural voice, and surely no philosopher can doubt that the first is to be ascribed to nervous delusion.

The solution which we have furnished above of the facts relative to the conversion of Col. Gardiner, is substantiated by all the circumstances connected with them, when rightly understood. He was in a state of repletion and heaviness, from the enjoyment of his previous entertainment, and on this account would be inclined to sleep. Passing from a scene of noise and conviviality, he went into solitude and silence, and began the perusal of a serious book, which to a mind uninterested in the great truths of religion, although constitutionally alive, at intervals, to a sense of its importance, would have a tendency also to induce drowsiness. These considerations should lead us to the conclusion, that although he was not in a deep sleep, the idea of which he strongly repelled, declaring that he was as broad awake during the whole time, as he ever was in his life, yet that he was in that state of existence denominated dosing, of which we are insensible at the time, and when awakened out of it cannot be convinced that we were even partially asleep. That he was in this partial slumber, seems to be still more strongly confirmed, by the account which he himself gave of the voice that he supposed he heard, for he was not very confident, whether it was an audible voice, or only a strong impression made upon his mind equally striking. This confusion in his statement shows, that he was not in the sound and full enjoyment of his faculties.

Again, all the circumstances of the case favoured a delusion of the senses in this instance. Colonel Gardiner was excited

by previous indulgence in the pleasures of the table. He had entered into a criminal assignation, and was conscious he was about to do his neighbour the greatest of all injuries, violate his conscience and offend his God. A new turn was given to his thoughts by his religious book. Conscience was roused and began to smite him, and our feelings are never so pungent as when we pass from one extreme to another. If we have any of the dying embers of piety in the heart, they are never so apt to be kindled anew as when we are on the eve of some horrible crime. The soul is, then, alive to all the acutest compunctions of conscience. Colonel Gardiner falls into a partial slumber. Oppressed with his previous banquet, the crudities of indigested food disturb his slumbers. He starts up suddenly, and the candle throwing its glare of light in his face, his mind glances with the rapidity of lightning along that succession of ideas with which it had been occupied in reading his book, and he converts that light into supernatural illumination, while a distinct image conjured up by his fears is presented to his eye, and unreal sounds assail his ear. In all this we perceive nothing out of the ordinary laws of human nature. From such views as these let the happy moral effect be produced upon our mind, of purging it by philosophy from superstitious fears. Religion has a sufficiently pungent and powerful effect upon the heart and life, when its doctrines are received in their native purity and vigour, without requiring any reinforcement from such a questionable source, to accomplish its benign purpose, in ameliorating the condition, controlling the passions, and promoting the eternal salvation of mankind. Those who allow themselves to be disturbed by idle fears of ghosts, apparitions, ominous dreams, frightful sights, sounds indicative of future evil, and all the wretched trumpery of ignorance and blind credulity, do as much dishonour to their religion, as to the dignity of their own nature. It is not by starts and convulsive struggles, that the divine

grace draws us towards God and our supreme good, but by as regular, uniform and invariable laws, as those by which the planets are moved in their spheres. Let us not form low and unworthy conceptions of the Creator, but endeavour to elevate our thoughts to the dignity and the beneficence of his nature, as well as the full extent of that comprehensive scheme of providence which he has established over the universe. His kingdom ruleth over all, and under the operation of those laws by which he governs the world, the righteous shall surely be rewarded, and the wicked punished; but his government is steady and immutable, not consisting of temporary expedients, and irregular efforts of authority. Ever since those stupendous exercises of omnipotent power which were made from the necessity of the case, in the Patriarchal, Mosaic, and Christian dispensation, for the introduction and final establishment of our religion, the order of grace has been subjected to as regular and invariable laws, as the departments of the physical, or moral world.

CHAPTER X.

Of Discernment, Judgment, Wit, Attention, Intension, &c.

AFTER the power of perception, and thinking in general, the next faculty of the mind which claims our notice, is that of discernment, by which is meant that power by which we are able to discriminate our perceptions and thoughts from each other, or rather those objects and qualities, either in the external or internal world, which present themselves to the contemplation of the mind. A mere dim perception of the existence of things without us, or of the operations of the soul within, would be but a dull and undesirable state of being, when compared with that which is enjoyed by man, who has his curiosity kept perpetually excited, and his feelings interested by the variety of objects, each differing in some degree from the other, continually offering themselves to his view. This discernment of objects and qualities, no doubt, becomes more acute in proportion as animals are elevated in the scale of being. In those of the lowest grade it can scarcely be extended beyond those instinctive perceptions of their food, drink, and other objects which are indispensably necessary to their comfort and preservation. In man this faculty of discernment, commencing its operations with his first and simplest sensations about the things with which he is conversant, is strengthened and matured by exercise; until at length when the understanding is cultivated

and enlarged by science and study, it is sharpened into a deep insight into the whole complicated structure and operations of nature. He who possesses and has cultivated this power, perceives objects in nature that lie concealed from the vulgar; discriminates those which would be confounded by others, and looks with a keener vision upon every department both of the physical and moral world. Commencing its operations in enabling us to distinguish the different colours, tastes, smells, sounds, together with the various acts of the mind, it afterwards looks around with penetrating sight upon the face of nature, discovering its beauties and deformities, separating the true from the false causes which are assigned for its effects, revealing to us the sound from the unsound, in propositions and reasonings, inferring the characters and dispositions of mankind, from the expressions of their countenances, disclosing to us the excellencies and blemishes in style and composition, together with a finished and imperfect execution in the arts. With the operations of this power of discernment, are intimately connected those of attention, intension, and judgment.

Attention implies that notice which the mind pays to the several objects that come under its review, when it not only cursorily surveys them, but dwells upon them by voluntary choice. Intension, or study, is that act of the mind, by which we fasten its notice upon any subject still more deeply, so as to investigate it fully; survey it on all sides, and examine it with the minutest scrutiny. Judgment is that power by which, without going through the operose process of reasoning, we form just estimates of the order and succession of things around us, the characters and conduct of mankind, the probable results of measures proposed to be adopted; and in fine, which, in the absence of demonstrative evidence, enables us to decide upon probabilities. Judgment, therefore, it will be seen, implies a previous exercise of the powers of attention and of discernment, and is most inti-

mately connected with the latter, which it always presupposes, but nevertheless extends beyond it. A man possessed of a good judgment, must not only have been in the habit of discriminating his perceptions and ideas from each, so as to prevent confusion among them; but must also have been a nice observer of causes and effects, the characters and conduct of mankind, together with all those motives which usually influence their actions. Mr. Locke, with satisfactory clearness and justness of conception has explained, upon the principles of human nature, that ordinary maxim, that men who have the readiest wit have not generally the clearest judgment, or most profound reason. The solution which he offers for this common observation, is, that wit and judgment imply two opposite exercises of the mind. Wit consists, for the most part, in tracing among objects unexpected similitudes or incongruities, by which agreeable pictures are framed to amuse the fancy; while judgment, on the other hand, performs the opposite function of discriminating objects with nicety from each other, so as not to be imposed upon by distant similitudes, or the appearance of correspondence. He, therefore, who takes great delight in pursuing those similitudes and contrasts, with which he can entertain and enrich his fancy, will not be likely to excel in making those distinctions and separations of his ideas, in which consists the exercise of his discernment and judgment. This explanation of Mr. Locke, is just and satisfactory. There is no one, indeed, who can greatly excel as a wit without some degree of judgment, nor is it probable that there is any one who is entitled to the reputation of a man of profound judgment, who does not in some degree possess a talent for tracing those unexpected resemblances and contrasts, which afford such lively entertainment to the mind. The character of the mind, however, will be determined by the general prevalence of the one tendency or the other; and so limited in their nature are the human faculties, that he

who strongly inclines to the indulgence of the one exercise of his mind, will scarcely ever be found greatly to excel in the other. This view of the subject may serve also to explain the observation of Mr. Burke, that the study of the law, at the same time that it tends to sharpen the intellectual powers, and render the judgment more acute, does not tend, in the same degree, to liberalize the mind, and enlarge its comprehension. This is certainly the case, and arises from the circumstance, that the science of jurisprudence, and the study of the law, consist almost solely in making nice distinctions, and separating from each other those ideas which seem to be nearly related; that the discernment and judgment are almost the only powers exerted in the prosecution of them; and of course, while those powers are vigorously exercised, and greatly whetted, the mind is not likely to be furnished with any of those intermediate ideas, that can conduct it through a series of conclusions in the other branches of science, or with those agreeable pictures and images, with which the poet and fine writer, entertain the imagination. Nothing, however, can contribute more effectually to give clearness, precision and accuracy to our conceptions, than the study of the law, or afford a better preparation for the successful prosecution of the more abstruse sciences, if the pleader can find time from his entangling occupations to turn his attention to them.

One of the most important acquisitions for those who wish to render themselves distinguished for their attainments in science, their skill in the arts, or for a sound and deep insight into the affairs of mankind, is an early and patient habit of attention, to whatever subject at the time is presented to their consideration. The habit of close and intense thinking, which is almost always to be acquired by care and assiduity, although it is probable by some persons with greater, and by others with less difficulty, is the cause of those great distinctions which are found amongst men, rather than any mate-

rial differences in their natural endowments. Some persons, indeed, may be incapable of this nice and discriminating attention, from the original dullness and imperfection in their organs of perception, and faculties of thinking; but many more are rendered so by a culpable neglect and indifference as to the cultivation of their powers of discernment, or by that precipitate and hurried manner with which they review every object that presents itself to their consideration. Newton, when asked by what means it was, that he was enabled so far to surpass other men in his attainments and discoveries in science, replied, that he did not consider any thing which he had done, so much the result of any superiority in his natural parts, as of the habit of attention which he had contracted in early life. This is the grand secret by which he accomplished such wonders; and it is a secret, of the full importance of which it deeply concerns the student to be apprised. By means of this habit of close attention, early contracted and pertinaciously pursued, there are no limits to be set to the acquisitions which might be made, even by moderate talents and endowments. It is by this that the painter, the sculptor, the poet, and fine writer, are able so far to extend the acquired perceptions of their "mental eye," as to have the whole compass of nature with the minutest and nicest springs in its vast machinery, at a single glance unfolded to their view. If we narrowly examine the conduct and feelings of children when they are first beginning to learn, we shall find that their great difficulty consists in obtaining the power of fixing their attention; and when this habit is completely formed, the great work of their education, as far as it depends upon the assistance they can derive from instructors, is accomplished.

We should here have concluded our observations on the subject of attention, did we not feel it incumbent on us, according to our original plan, to undertake the refutation of some errors into which professor Stewart has fallen in his dissertation upon it. We think it would be difficult to find

in any author more errors comprised in so short a compass, than there are in this dissertation, while, at the same time, those errors are recommended by an artifice of language and plausibility of argument and illustration, well calculated to impose upon the understandings of those who are slightly conversant with the science of the human mind, but have never taken the pains fully to investigate it. In the first place, the professor asserts, in his remarks upon attention, "that he does not recollect that the power of attention has been mentioned by any of the writers on pneumatology in their enumeration of the faculties of the mind." Is not this assertion somewhat singular for a writer, who, in this very essay, refers several times to the treatise of Mr. Locke? Now Mr. Locke, in treating of what he denominates the simple modes of thinking, says,* "when the ideas that offer themselves are taken notice of by the mind, and, as it were, registered in the memory, it is attention." Is not this to enumerate attention among the operations of the mind; and of course recognising in our constitution a power by which that operation is performed? It may not, indeed, have been as fully considered and examined as its importance deserves; for I am inclined to think that upon none of our powers, save reason itself, does our progress in all kinds of knowledge more materially depend. The habit of closely attending to his nicest perceptions, and marking with the greatest accuracy all the qualities and shades of difference between the various objects he converses with, forms one of the greatest distinctions between the philosopher and the vulgar. He, who, from the earliest period of life, shall form a determination to obtain distinct and accurate ideas about every thing presented to his inspection, or contemplation, whether it be an important fact or anecdote recorded in history, an interesting sentiment or description in a fine writer, or a

* Book 2, chap. 19. Treatise upon Understanding.

masterly argument and train of reasoning, will be able to attain by gradual accumulations, an extent of information, a justness of conception and a depth of penetration, of which in the commencement he had no idea. But to proceed with our professor. Perhaps when he asserts that no writer upon pneumatology had enumerated attention among the powers of the mind, he does not mean the same kind of attention as that act or power alluded to by Mr. Locke. This would seem to be inferable from his own expressions. "Helvetius, indeed," proceeds the professor, "in his very ingenious work, *de L'esprit*, (so he calls that mass of crudities) has entitled one of his chapters, *De l'inegale capacite d'attention*; but what he considers under this article, is chiefly that capacity of patient inquiry, upon which philosophical genius seems in a great measure to depend. He has remarked with the writers already mentioned, that the impression which any thing makes on the memory depends much on the degree of attention we give it; but he has taken no notice of that effort which is absolutely essential to the lowest degree of memory. It is this effort that I propose to consider at present; not those different degrees of attention which imprint things more or less deeply on the mind; but that act or effort without which we have no recollection or memory whatever." Here we perceive that the professor proposes to treat, not as others had done, of that power or act of the mind denominated attention, but we are led to expect that we shall find disclosed to us what we had before considered as one of the secrets of nature, that act or effort without which we have no recollection or memory whatever; or in other words, what is the least degree of attention which must be paid to any thing by the mind, before we shall be able to recollect it. Upon the first propounding of this subject of inquiry, they, who are accustomed to philosophical speculations, and are acquainted with the legitimate objects of investigation to the human mind, would be inclined shrewdly to suspect;

that this is a matter utterly beyond the reach of our limited faculties; and that to propose to ascertain what degree of attention must be paid to any of our thoughts and perceptions, before they are ripened and prepared to be deposited in the storehouse of the memory, and from thence to be drawn out by the faculty of recollection, would resemble very much an attempt to decide what degree of velleity, or smallest tendency in the will, amounts to an act of volition, what degree of attachment in the heart is equivalent to the passion of love, or to express the matter in still more intelligible phrase, what degree of bodily appetite for an apple will induce us to devour it. Nevertheless, notwithstanding our philosophical scruples and prepossessions against the very subject of inquiry, we put our understandings under the guidance of the professor, and although inclined to believe that our research must be fruitless, are willing to give credit to any discoveries which he may be so fortunate as to make. We are prepared to expect some new disclosure of the secret structure and operations of nature. In this matter, however, we soon find ourselves greatly disappointed. It is a custom of this writer, as I doubt not has been often remarked by his intelligent readers, always to have on hand a world of things to be done, but never to accomplish any thing. When he takes up any subject, he goes about it, and about it, in many a graceful circle, but scarcely every reaches it. After our expectation has been excited of witnessing a display of ingenuity and profound disquisition, by which it is to be ascertained that act or effort of attention, which is absolutely essential to the lowest degree of memory, in the very next paragraph we are informed, "that with respect to this effort, it is perhaps impossible to obtain much satisfaction, and that for his part, he is inclined to suppose (though he would by no means be understood to speak with confidence,) that it is essential to memory, that the perception or the idea that we would wish to remember, should remain in the mind for a certain space of time, and should be contemplated by it exclusively of

every thing else." Thus we have arrived at our conclusion, and have stumbled upon the grand and unexpected discovery, that in order that we should be able to remember any idea it is necessary, *it should have remained in the mind for a certain space of time!!* Could we conceive it possible that any persons can be found, who mistake this for profound metaphysical disquisition?

But we have much greater discoveries than this to relate for the instruction of the republic of letters, in the professor's remarks upon attention. We proceed to the second. "When we are deeply engaged in conversation," says the professor, "or occupied with any speculation that is interesting to the mind, the surrounding objects either do not produce in us the perceptions they are fitted to excite, or those perceptions are instantly forgotten. A clock, for example, may strike in the same room with us without our being able, the next moment, to recollect whether we heard it or not. In these and similar cases, I believe, it is commonly taken for granted, that we really do not perceive the external object. From some analogous facts, however, I am inclined to suspect that this opinion is not well founded. A person who falls asleep at church, and is suddenly awaked, is unable to recollect the last words spoken by the preacher, or even to recollect that he was speaking at all. And yet that sleep does not suspend entirely the powers of perception, may be inferred from this, that if the preacher were to make a sudden pause in his discourse every person in the congregation, who was asleep, would instantly awake. In this case, therefore, it appears, that a person may be conscious of a perception, without being able afterwards to recollect it."

In this and some of the following paragraphs, all the facts adduced by the professor, are intended to prove these two propositions. First, that a person may be conscious of a perception, without being able afterwards to recollect it; or in other words, may forget many things of which at one

time he was conscious. Secondly, that a perception, or an idea, which passes through the mind, without leaving any trace in the memory, may yet serve to introduce other ideas connected with it by the laws of association, or to express the maxim in vulgar phrase, we may by association have one train of ideas introduced into the mind, by another train which has escaped our memory. Would it have required a Solomon to be sent into the world, to give us this information? Is there any one disposed to doubt that he forgets some things with which he was once acquainted? Is there any one who would put the professor to the trouble of proving, that a large proportion of those ideas which are perpetually floating in his mind, during his waking hours, are entirely effaced from his memory? But it is really somewhat singular, that while the professor is maintaining with great display of learning and decoration of imagery, what no one in his senses would dispute with him, he should have supported his propositions by false arguments. In endeavouring to sustain the assertion that a person may be conscious of a perception, without being able afterwards to recollect it, he says, "A person who falls asleep at church, and is suddenly awakened, is unable to recollect the last words spoken by the preacher; or even to recollect that he was speaking at all. And yet that sleep does not suspend entirely the powers of perception, may be inferred from this, that if the preacher were to make a sudden pause in his discourse, every person in the congregation who was asleep, would instantly awake." This inference is what might be called in the language of the law, a non sequitur. Mr. Stewart here supposes that a person who has fallen asleep at church, has all the time a perception of the preacher's voice. Now we presume that it would be as difficult to detect a perception of a preacher's voice, in a man asleep at church, as it was in Martin, and Jack, to discover beef, mutton, veal, venison, partridge,

plum-pudding, and custard, in Lord Peter's brown loaf. We suspect that these church-sleepers are engaged in no such godly occupation as listening to their pastor's voice. But we are provided with a proof, which is unanswerable! If the preacher, who by a dull sermon, has lulled his audience asleep, should make a sudden pause in his discourse they would instantly awake! This is proof demonstrative that their powers of perception were not suspended in sleep! Now, with all due submission, we should be inclined to think, that it is only conclusive proof that they were not so soundly asleep, as to be incapable of being awaked. If the sleeping part of the audience were all awakened by a pause made in preaching, which it is very probable they would be, unless they happened to be so soundly napping as to begin to snore themselves, and drown the voice of their pastor, as once took place, we are informed, in the presence of Dr. South, when the King of England and lord Lauderdale, being both in church, fell suddenly asleep, and the latter beginning to snore, Dr. South called out to him not to snore so loudly, lest he should wake his majesty. I say unless under circumstances of this kind, I entertain no doubt that should a preacher who has lulled his audience to sleep, make a sudden pause in his discourse, they would instantly awake. But I should be very far from ascribing this result, to the circumstance, that all this time, their perceptive powers had not been suspended. They would be awakened by that new action produced in the organs of hearing by a suspension of the speaker's voice, together with the ceasing of the former action upon them. The professor himself, in some parts of his works, has remarked, if I mistake not, the effect which the same sound continued has in lulling us asleep. This fact is well known, and is familiar to all persons. Now, if we suppose the hearer, in one of our churches, to be put to sleep by a discourse monotonously delivered, if the speaker should suddenly make a pause in his

discourse, not only this monotonous sound, which induces sleep, would be removed, and, of course, the effect be likely to cease with its cause, but an entirely new affection of the auditory nerves would take place; and any new affection or change taking place in the organs of the body, we know, has the effect of resuscitating us from sleep. The sudden impulse of the body, or a loud call, will arouse those who are in the deepest sleep, while even ordinary conversation will awake persons from their usual slumbers. How is this effected, but by a sudden change produced in the organs of sensation? Privative causes, in this respect, are found to produce upon the mind and body, precisely the same results as positive. Pain produces one sensation in the mind, its removal an entirely distinct one; the application of ice or fire to the body one perception, their removal another; and in both cases, the mind is alike awakened from its dormant state. Those who have been accustomed to sleep in situations, in which they were subjected to the inconvenience of loud and continued noises, not only become accustomed to the annoyance, but if they be suddenly transferred to silent retreats, find it difficult to obtain their usual repose. How can this last circumstance, not a little singular, be accounted for, but from the consideration, that at the time, in which they retire to repose, from the absence of the sounds which usually assailed their ears, a new effect is produced upon them, which excites the mind, and disinclines the person to rest? This view of the matter, we doubt not, will with every intelligent reader serve to account for the fact, that he who has fallen asleep at church during the delivery of a discourse, will awake if the preacher make a sudden pause; without resorting to the improbable supposition, that the mind during sleep has not its powers of perception suspended, or, in other words, still hears the speaker's voice.

The reader will excuse me, if I am compelled to spend some time in frivolous discussions, as I wish once for all, to

afford him a fair specimen of that kind of disquisition, which has lately assumed to itself the honourable appellation of the philosophy of the human mind. Our professor proceeds:

“Many other instances of the same general fact might be produced. When we read a book, (especially in a language which is not perfectly familiar to us,) we must perceive successively every different letter, and must afterwards combine these letters into syllables and words, before we comprehend the meaning of a sentence. This process, however, passes through the mind, without leaving any trace in the memory.” If this is produced to confirm the professor’s proposition before mentioned, as it appears to be: viz. that a “person may be conscious of a perception, without being able afterwards to recollect it,” he has missed his mark, even in a case so extremely simple. It is only when we are learning to spell, that we are conscious in reading a book, that “we perceive successively every different letter, and must afterwards combine these letters into syllables and words, before we comprehend the meaning of a sentence.” After we have learnt to read with facility, surely no man is conscious, in perusing a book, that he perceives every letter in every word, and then combines them into syllables and words. We do this by habit with so much rapidity, that it is performed unconsciously to ourselves. But I can discover no necessity for supposing, that in reading a book, every letter in every word is distinctly perceived. I am aware of the wonderful rapidity, with which the mind, and the eye too, may by habit, learn to perform its operations. But in a case of this kind, I suspect that this rapidity of operation, may be misunderstood and overrated. I am disposed to think, that after learning to spell, in doing which a minute attention is paid to every letter in a word, the mind forms to itself insensibly, more general signs, by which it learns to distinguish syllables and words from each other; as by custom, we learn to discriminate the different objects in nature, by a sin-

gle glance at their characteristic properties, without going through the detail of the whole number of their qualities. In this opinion, I am confirmed by the difficulty with which we meet at first, in correcting the proof sheets of any work in the press. How often do letters in this case, escape our examination, and what care and strict attention are requisite to enable us to detect errors and omissions? Upon Mr. Stewart's principles, we must perceive, in these cases, every letter in each word, and, of course, we must perceive what there is not, which supposes extraordinary power of perception, indeed. In the language of the poet:

Optics sharp it needs, I ween,
To see what is not to be seen.

On these accounts, there seems to be sufficient reason to conclude, that in reading with facility, the eye and the mind learn to relieve themselves, from the fatigue of noticing every letter in particular, by forming to themselves a set of more general signs, by which words are distinguished. By attending, too, to the meaning and drift of the author, we are facilitated in our efforts to decipher his terms. We become acquainted with the phraseology used by writers to convey their meaning; and expecting the words that are to follow, if we see but a part of the syllables and letters, of which they are composed, we readily supply the rest.

This we conceive to be the true state of this matter. If, however, this instance of the facility with which we learn to trace the words of an author in reading, had been given as a proof of the wonderful velocity, with which both the mind and the eye, can learn by habit to perform their operations, it would be in point, and readily conceded. We know, and it is a fact not disputed, that the mind and body can be brought, by the force of habit, to perform their functions with such rapidity, as not only never to be remembered by us afterwards, but as even to escape our own consciousness.

These matters are not disputed, and the professor's attempt to prove, that many perceptions of which we are conscious at the time, may be forgotten and obliterated, is like an attempt to prove, that we are possessed of the powers of memory, recollection, and reason.

But what has been said hitherto by the professor on this subject, are only preliminary observations, intended to prepare the way for a new theory, in reference to some of the phenomena of the human mind. "These instances," says he, "were produced merely to illustrate the meaning, I annex to the word attention; and to recall to the recollection of the reader, a few striking cases, in which the possibility of our carrying on a process of thought, which we are unable to attend to at the time, or to remember afterwards, is acknowledged in the received systems of philosophy. I shall now mention some other phenomena, which appear to me to be very similar to these, and to be explicable in the same manner; although they have commonly been referred to very different principles.

"The wonderful effect of practice in the formation of habits, has been often and justly taken notice of, as one of the most curious circumstances in the human constitution. A mechanical operation, for example, which we at first performed with the greatest difficulty, comes in time to be so familiar to us, that we are able to perform it without the smallest danger or mistake, even while the attention appears to be completely engaged with other subjects. The truth seems to be, that in consequence of the association of ideas, the different steps of the process, present themselves successively to the thoughts, without any recollection on our part, and with a degree of rapidity, proportioned to the length of our experience; so as to save us entirely the trouble of hesitation and reflection, by giving us every moment, a precise and steady notion of the effect to be produced.

“In the case of some operations which are very familiar to us, we find ourselves unable to attend to, or to recollect, the acts of the will by which they are preceded; and accordingly, some philosophers of great eminence, have called in question the existence of such volitions; and have represented our habitual actions as involuntary and mechanical. I cannot help thinking it more philosophical to suppose, that those actions which are originally voluntary, always continue so; although in the case of operations, which have become habitual in consequence of long practice, we are not able to recollect every different volition. Thus in the case of a performer on the harpsichord, I apprehend that there is an act of the will preceding every motion of every finger, although he may not be able to recollect these volitions afterwards; and although he may during the time of the performance, be employed in carrying on a separate train of thought.”

Again he says—“When a person, for example, reads aloud, there must be a separate volition preceding the articulation of every letter; and it has been found by actual trial, that it is possible to pronounce about two thousand letters in a minute.”

This is the professor's theory on this subject; and he that can swallow such doctrines in the science of the human mind, must have a sharp appetite for the mysterious and incredible. I shall first state the received opinions of philosophers on this subject, and then undertake the refutation of this new one.

Dr. Reid, as quoted by the professor, says, “I conceive it to be a part of our constitution, that what we have been accustomed to do, we acquire not only a facility, but a proneness to do on like occasions; so that it requires a particular will or effort to forbear it, but to do it requires very often no will at all.”

Mr. Locke's account of the matter is as follows. “Custom settles habits of thinking in the understanding, as well

as of determining in the will, and of motions in the body. A musician used to any tune will find, that let it but once begin in his head, the ideas of the several notes of it, will follow one another orderly in his understanding, without any care or attention, as regularly as his fingers move over the keys of the organ, to play out the tune he has begun, though his unattentive thoughts be elsewhere a wandering."

Here we perceive that the opinion of Mr. Locke, with which that of Dr. Reid corresponds, is, that in the case of our habitual thoughts, they are frequently connected together by the principle of association, without any intervention of the will at all: and in the case of habitual actions, we learn mechanically to perform them, even while our thoughts are occupied with other objects.

Professor Stewart, in his note E, upon what he has written on the subject of attention, endeavours to enlist Mr. Locke of his party in these views of this matter, but entirely without success. And not only so, but the very passages he quotes from Mr. Locke, while they do go, indeed, to show that Mr. Locke was aware, as every philosopher must be, of the remarkable quickness with which the mind, in some instances, performs its operations, at the same time, directly militate against his own doctrine about our habitual actions.

"Nor need we wonder that this is done with so little notice," says Mr. Locke, "if we consider how very quick the actions of the mind are performed; for as itself is thought to take up no space, to have no extension, so its actions seem to require no time, but many of them seem to be crowded into an instant. I speak this in comparison to the actions of the body. Any one may easily observe this in his own thoughts, who will take the pains to reflect on them. How, as it were, in an instant, do our minds, with one glance, see all the parts of a demonstration, which may very well be called a long one, if we consider the time it will require to

put it into words, and step by step show it to another? Secondly, we shall not be much surprised that this is done in us with so little notice, if we consider how the facility which we get of doing things, by a custom of doing, makes them often pass in us without our notice. Habits, especially such as are begun very early, come at last to produce actions in us, which often escape our observation. Men that by custom, have got the use of a by-word, do almost in every sentence pronounce sounds, which, though taken notice of by others, they themselves neither hear nor observe." In regard to this last instance mentioned by Mr. Locke, the use of by-words, the principles of Mr. Stewart are, that those actions which are at first voluntary in us, continue to be so, and that between the sounding of every letter in the by-words, there is an act of the will intervening; the principles of Mr. Locke are, that not only is the by-word pronounced frequently without the intervention of the will, but without even the observation or notice of the person at all. Who is right in his decision, it may be left to any intelligent person, who reflects upon the operations of his own mind, to judge.

While Mr. Locke, however, discovers himself to be fully apprised of the great rapidity with which the mind, in some cases, performs its operations, insomuch that many of them seem to be crowded into an instant: it is to be remarked, that, as he himself expresses it, he means this in comparison of the actions of the body. There must be limits, and those too very narrow ones, from the finite nature of the human soul, within which the rapidity of its actions must be circumscribed. That he was fully aware of this, appears from chap. 14, book 2, sect. 9, of his essay. "Hence I leave it to others to judge," says he, "whether it be not probable that our ideas do, whilst we are awake, succeed one another in our minds at certain distances, not much unlike the images in the inside of a lantern, turned round by the heat of a candle. The appearance of them in train, though perhaps, it

may be sometimes faster, and sometimes slower; yet I guess varies not very much in a waking man. There seem to be certain bounds to the quickness and slowness of the succession of these ideas, one to another in our minds, beyond which they can neither delay nor hasten." Mr. Locke, therefore, conceives that there is a maximum and a minimum, in the degree of quickness with which our ideas succeed each other, and that those two points are not very remote from each other. In regard to our external senses, and those perceptions which are admitted by them, we know from fact and experience, that there is a degree of slowness and rapidity in the ideas, derived from those sources, which it is not difficult to ascertain. Objects frequently move so swiftly by us, that they are imperceptible to the senses, and the shadow of the sun upon the dial, or the hour-hand upon the face of the watch, move so slowly as to produce the same result, and to be undiscerned. In regard to the moral world, and the phenomena of the human mind, there is a great difficulty presented in determining the principles by which they are regulated, from the thinness of the structure of the one, and the transitory and evanescent nature of the other. Hence a theory false or absurd, may gain a temporary currency, because no one has sufficiently examined the subject, to be able to detect its unsoundness. This difficulty meets us in the discussion of the present point. We all know the quickness, with which the human mind performs its operations, but at what point it must stop, and what is the degree of that swiftness, beyond which it cannot advance, it is extremely difficult to decide. Its progress is not an object of the senses, and therefore, to attain certainty by any satisfactory experiments, appears to be an arduous task. We trust, however, that we shall be able to satisfy every unprejudiced reader, that at least in the extent to which this matter is pushed in the theory of the professor, it is unfounded and

absurd, and contradicted by all the best established facts, and unbiassed suggestions of the human mind.

The professor's theory is, that those actions which were originally voluntary, continue so; that a man playing at the harpsichord, has an act of his will, intervening between every motion of every finger; and also that one person in speaking to another has an act of his will, intervening between the pronounciation of every syllable and every letter in each word.

If this theory be true, in the first place; as a musician can sing a song at the time of playing his tune, not only must there be an act of his will between every motion of every finger, but also between his pronounciation of every letter of every word at the same time. Nor is this all, if he is playing upon one side of his piano with five fingers, and upon the other with the other five, and if he be expert at music, he will be looking at the same moment at the words of a song which he never saw before, and catching them from the paper. Still more; if he be a lover of music, his whole soul and deepest attention will be absorbed in the sentiments contained in his song, and he will be aiming at giving them full effect, by the touching tones with which he repeats them. Now, in all this complex operation, is it possible, that the mind is present through every part, and accompanying every successive step, however rapid the progress, by successive acts, both of thought and volition? Nothing can be more preposterously absurd than to suppose it. Let us analize, now, the whole complex operation, and see what inconceivable wonders we are supposing the human mind to be achieving. Between every successive stroke of the fingers of both hands upon the piano, there is supposed to be a distinct act of volition. Between every letter and syllable the musician pronounces in singing, there is supposed to be a distinct act of volition. Of every letter and syllable in the song which he is catching from his book, he is said to have a distinct perception, at the same time that he is combining these letters into

syllables, and these syllables into words. And during this whole time, while the mind is performing successive acts of express volition with inconceivable rapidity, it is insensible of these operations, and its supreme attention is engaged with the sentiments contained in a song, and the thrilling tones with which it is sung. If this be the case, must not our ideas, instead of passing through the mind in that regular order alluded to by Mr. Locke, when he compares them to images in the inside of a lantern turned round by the heat of a candle, move with the velocity of a whirligig?

Besides the evident absurdity and impossibility of the thing, there are striking and satisfactory arguments against it, and in favour of the old theory of philosophers upon the subject. There are some common and indisputable phenomena, which can be solved, only upon the principle, that some of our motions are absolutely mechanical and automatic. A man has contracted the habit of profane swearing, but becomes a convert to christianity. For some time after his reformation, profane language escapes from him against his will, and it takes him time and vigilant attention completely to conquer this vicious habit. Here the mechanical force of habit impels him to offend not only without his volitions, but in direct opposition to them. Could there in this case have been an express act of volition, between every syllable and letter which he pronounced in this manner? So far from it, that, perhaps, he was not aware that he had used such expressions, his wishes and thoughts being diverted to other affairs. An orator in speaking, has acquired some awkward and unseemly gesture, or some barbarous pronunciation of his terms. He is informed of the circumstance by a friend and determines to correct it. The very next time he attempts to speak in public, the same pronunciation or gesture is repeated. Is an act of the will here in favour or against it? Do we not find here the influence of mere mechanical action?

But, in order to put this matter beyond all kind of doubt, let us place it in other points of light. Upon the principles of the professor, when a man is playing upon a piano, a distinct act of the will intervenes between every motion of every finger, and between his sounding of every letter, contained in the song he is singing. Now, say that one hand is striking the base notes, and the other those of the counter or tenor: must we not conclude in such case, that between the unnumbered motions of the fingers upon the right hand, and those of the fingers upon the left, there is, at times, not the hundredth, thousandth, millionth, billionth part, (and so on indefinitely) of a second? Must not the same calculation of time be true, as to the instants, in which the syllables are pronounced in singing, and the instants, in which the notes are struck by the fingers? Now, from this calculation does it not appear, that if the professor's theory be true, distinct acts of the will must take place sometimes in the hundredth, then in the thousandth, then in the millionth and billionth, trillionth and quadrillionth, &c. part of an instant? Will any one believe this? All time, indeed, is relative, as the professor remarks, and there may be creatures in the universe capable of the wonderful quickness of perception and willing here supposed; but we are perfectly assured, that for a Being limited as man is, in his faculties both of mind and body, the thing is impossible. The phenomena, therefore, cannot be explained but upon having recourse to mechanical action in our system. We consider this argument as so completely satisfactory and unanswerable, that we shall not spend our own time and that of the reader, in attempting to show the insufficiency of those proofs, by which the professor has endeavoured to sustain his theory.

Lest we should fatigue our readers as much as we have fatigued ourselves, we hasten over a host of trivial disquisitions and absolute errors, to the learned problem so solemnly proposed and philosophically solved in the conclusion of the

professor's dissertation upon attention. "Suppose the eye to be fixed in a particular position, the picture of an object to be painted on the retina. Does the mind perceive the complete figure of the object at once, or is this perception the result of the various perceptions we have of the different points in the outline." To this question, thus gravely stated as if it were of immense importance, the professor gives the following answer. "That the mind would perceive every point in the outline of the object, provided the whole of it were painted on the retina at the same instant, for perception, like consciousness, is an involuntary operation. As no two points, however, of the outline are in the same direction, every point by itself, constitutes just as distinct an object of attention to the mind, as if it were separated by an interval of empty space from all the rest. If the doctrine, therefore, formerly stated be just, it is impossible for the mind to attend to more than one of these points at once; and as the perception of the figure of the object implies a knowledge of the relative situations of the different points with respect to each other, we must conclude that the perception of figure by the eye, is the result of a number of different acts of attention. These acts of attention, however, are performed with such rapidity, that the effect, with respect to us, is the same as if the perception were instantaneous." This statement may be regarded as the sublime of metaphysical science. We had before thought that we had descended deeply enough, when descanting upon the acts of the will, but now we are going deeper and deeper, and, no doubt, at last shall reach the very bottom of the ocean. We before heard of acts of the will which were performed in the billionth, trillionth, and quadrillionth, &c. part of an instant, and we now hear of acts of perception and attention, performed in as little time. For when we look at any object, as a landscape for instance, we do not have a truly instantaneous perception of it, but our perception is made up of as many percep-

tions and acts of attention, as there are minima visibilia, or least visible points in it; for, says the professor, "as no two points of the outline are in the same direction, every point by itself, constitutes as distinct an object of attention to the mind, as if it were separated by an interval of empty space from all the rest." The doctrine held, then, is, that when we look at this landscape, the rays which come from each minimum visibile, as Berkeley calls it, make a distinct impression upon the mind, and by a distinct act of attention it is perceived; and that when all these minima visibilia have been thus severally perceived by separate acts of attention, then the mind perceives the whole object, and not before. Now, as we showed before in regard to the will, amidst the numberless rays of light coming from the minima visibilia of any landscape or other object, that strike upon the retina and excite this perception and attention of the mind, must there not be some so rapidly succeeding each other, that not the space of time amounting to the billionth, trillionth, and quadrillionth, &c. part of an instant can intervene? Surely, no mathematical proposition can be more strictly demonstrated than this. Here then perception and attention, the last a voluntary act, is said to be performed in the millionth, billionth, trillionth, &c. part of an instant. The proposition, therefore, of the professor is so evidently trifling, absurd and ridiculous, that we shall not give ourselves the trouble of answering the arguments, by which he endeavours to substantiate it. The argumentum ad absurdum, is here also perfectly satisfactory. We should as soon seriously undertake to answer that proposition formerly discussed by the schoolmen, referred to by Dr. Reid, *num chimæra bombinans in vacuo posset comedere secundas intentiones*; or some of those learned queries so humorously referred to in that whimsical but profound piece of criticism, entitled *Martinus Scriblerus*, or the art of sinking in poetry.

CHAPTER XI.

Of Memory.

IN immediate connection with the power of attention and greatly depending upon it, is memory, by which we are able to retain possession of the ideas we have imbibed, and put them to their several uses. In the Greek mythology, we cannot say with what ground in philosophy, Mnemosyne was made the mother of the Muses. In this adjustment of the several places of their Gods, by the Pagans, we rather think that memory was elevated to an undue rank, and usurped some of the honours of reason and imagination. The memory is greatly aided in the functions allotted it in our system, by that application of mind which is denominated attention. The province of perception and attention is to collect together those treasures which are to be deposited in this store-house, as it has been very justly and significantly styled, to be called out at pleasure for the service of the understanding. More than half of those persons who are perpetually complaining of their want of memories, may rather ascribe their incapacity in recollecting things, which they desire to recall, to their habits of inattention. There is undoubtedly a great difference in the degree of strength in those powers of memory, with which different persons are endowed by the Creator, as there is a difference, in like manner, in all our other faculties; but there is also, as certainly, much

less original distinction among us in this respect, than there appears to be upon a superficial view. Many persons do not recollect what they have heard, seen or read, because they have not closely applied their minds to the subjects discussed, and endeavoured to obtain clear and distinct ideas about them. They pass precipitately from object to object, and obtain no clear and distinct ideas of any.

The power of memory performs two very distinct acts, remembrance, and reminiscence or recollection. By the one, we involuntarily call to mind what we had before known, and by the other, we voluntarily recall those ideas which were once conveyed into the mind; or what is the same thing, think anew of those things concerning which we had thought before.

There are three characteristic excellencies of a perfectly good memory, facility or quickness, in the acquisition of ideas, which we wish to appropriate to ourselves; the power of retention, by which we hold possession of those which have been committed to this depository; and lastly, readiness of recollection, by which we are able to command, at our pleasure, the whole store of ideas which we have accumulated, and put them into requisition as the purposes of life, and the intercourse of mankind may render it necessary. The great faults, therefore, of the memory, as opposites of these excellencies, are dullness in acquiring, unretentiveness, and unfaithfulness or slowness, in recollection. Some persons will commit any train of thought to memory, with great facility, but as quickly have it obliterated from their minds; while others, on the contrary, find great difficulty in committing any thing to memory, but when once it is well fixed in that power, it is faithfully retained. This may be one reason, among others, why those who have what are supposed to be parts more sluggish and unpromising, are often found, in the race of improvement, to outstrip competitors of much brighter talents, and who commenced their

career under more happy auspices. The very difficulty experienced by the former, in making their attainments, rendered those habits of attention necessary, which gave them clear and distinct ideas, and at the same time, enabled them completely to appropriate them to themselves. Hence, in a race of this nature, the fable of the hare and the tortoise is often realised. There is another reason, however, which may be given to account for this phenomenon. Those powers of understanding, which are the most solid and cultivable, are not apt to arrive at very early maturity. They are very gradually evolved, but at length expand into the greatest beauty and perfection. Great precocity of genius, generally disappoints the expectations it awakens. Premature talent, like a tender flower, expands at a very early period, blossoms, and exhibits all the appearance of producing a noble supply of fruit, but too often, like that fruit which is said to grow upon the margin of the dead sea, after displaying every symptom of flourishing and arriving at perfection, withers away, and crumbles at the touch. The lily and the rose, soon arrive at maturity, and as soon decay; but the oak and the cedar ripen slowly, and require time and nurture, to bring them to full perfection.

The same observation has been made concerning memory and reason, as were alluded to before, about wit and judgment; that wherever the one power is found in its greatest strength, there is apt to be a deficiency in the other. Mr. Pope, a nice observer, remarks, that,

Thus in the soul while memory prevails,
The solid power of understanding fails.

Within certain restrictions no doubt, this observation is well founded. In the original conformation of the mind, there can be no reason assigned why, when the power of memory is communicated in its highest perfection, there should be a failure in those of reason and invention, unless it be, indeed,

the acknowledged frugality of nature, who is known in all her works, to distribute favours, no doubt for the wisest purposes, with a most sparing hand. If, however, in the original structure of the mind, we can discover no reason why, when memory is given to us in its greatest vigour, we are not likely, at the same time, to be equally distinguished for the powers of invention, judgment, and reason, we can find sufficient excuse for the prevalent opinion of mankind on the subject, in the natural tendencies of the human mind, and the laws that influence its action. Man is with great difficulty excited to the exercise of those powers, which he does not find necessary to his well-being, or to execute the ordinary and important purposes of life. We have before seen, how a person possessed of sight, neglects to pay attention to all those nice perceptions of touch and hearing, which attract the most scrutinising observation of the blind. The reason of this, is, that to the first, those perceptions are useless, because their place is more than supplied by the higher power of sight. A similar rule holds in the case of all the faculties both of mind and body. Those who are possessed of unusually strong memories, find themselves so readily supplied out of the treasures of others, with all those lessons of theoretical or practical knowledge, which may serve their various purposes in life, that they are under no constraint to cultivate the talents of reason, judgment, and invention. They, on the other hand, who have a remarkably ready invention, and abundant resources within themselves, so that they are never at a loss for arguments and illustrations of the point in hand, cannot submit to the drudgery of making themselves masters of the views and conceptions of others. The reason, therefore, why these powers of reason and memory, are seldom found in their highest perfection united in the same person, is, that men are prone to exert them separately and distinctly, from each other, and in undue proportions. By this means, the one is apt to be cul-

tivated to the total exclusion, or but partial exercise of the other. I do not mean to assert, indeed, that there may not in our original structure, be communicated to us one of these faculties in great vigour, while we are left entirely destitute, or but in a slight degree possessed of the other. But a great deal also, depends upon the proper culture of the mind, whether the one shall gain the pre-eminence, or all shall be alike nurtured and invigorated. Nothing can be more false than that sentiment, so frequently recurred to in society, that deep erudition, and the study of the most finished models, are calculated to repress genius, and shackle the inventive powers. Little minds only, are encumbered by the weight of learning, but to really good ones it becomes their sustentation. Science and learning, furnish the literary artificer with more copious materials, out of which to form his structures, and his skill will be displayed in the selection of his materials, and the execution of his work. Can it ever be of disadvantage to any one, to have a large stock of precious materials on hand, save to those who have not address and ingenuity enough, to apply them to practical purposes, and on this account allow them to rot and perish in their possession? To the man of true genius, every scrap of information he obtains is of real service, and the largest accumulations remain entirely at his disposal. Feeble minds, have their vanity and ambition sufficiently gratified, in being able to display ostentatiously, the intellectual wealth of others, but strong ones have a higher aim, to draw new riches from their own resources.

The great art, in education, as I conceive, consists in the contemporaneous cultivation of all the powers of the mind, and that too, in a just proportion to their importance and dignity. As reason is, indisputably, the noblest prerogative of our nature, the earliest and most solicitous attention, should be devoted to its improvement. Afterwards in due order, should be cultivated the memory and imagination,

which may be regarded as the hand-maids of reason. The one supplies it with the lessons of past experience and observation, and the other gives its embellishments to the structures it has reared. Under this view of the subject, the more abstract and difficult studies, should at a very early period, be mingled with the more agreeable and easy of acquisition, in the instruction of youth. As soon as it can possibly be done with advantage, let the hardier powers of the understanding be put to the test, strengthened and invigorated.

Mr. Locke informs us, that “the celebrated Mr. Pascal, until the decay of his health, had impaired his memory, forgot nothing of what he had done, read, or thought; in any part of his rational age.” The declaration of Mr. Pascal was, that he forgot nothing which he chose to remember, and must, no doubt, have been intended to be taken in a very limited sense. He must have meant, that he forgot nothing of great importance, for no man could tell whether he faithfully retained every slight act, which he had performed, or every trivial idea, which had passed through his mind in reading or reflection, during such a length of time. Such a memory, as far as it is to be acquired, is worthy of our most assiduous exertions to obtain it. How useful is it, even in the ordinary transactions of life; but to the orator, the philosopher, the poet, and fine writer, it is indispensable. And, in order, to encourage us in our endeavours to improve this talent, it is worthy of remark, that, perhaps, we do not possess a more cultivable faculty. Making its appearance in the child in the feeblest beginnings, there are no limits to be set to the improvement of which it is susceptible, by regular, continued, and vigorous exercise. By the help of this faculty, the orator, who, at first, made his appearance in a public assembly with timidity and discomposure of mind, being alarmed and agitated, lest he should fail in his attempt, to convey to others the ideas which occupied

his own mind, is enabled at a single glance, to review all the arguments he had prepared in his private reflections, and thus feel himself entire master of his subject, and able to proceed with steadiness and composure, through the various stages of its discussion. By means of this, it is that the philosopher treasures up in his mind, those maxims of science, which lead him on from investigation to investigation, and from one discovery to another; that the poet retains for the delight of mankind, those fine sentiments, sublime descriptions, and glowing images, which present themselves to him in his moments of inspiration; and that the statesman, and man of business, is enabled to summon to his aid, on the greatest emergencies, all the lessons of his former observation, to determine him to action. And when properly estimated, what a strange and extraordinary power is it? If we were not so familiar with its results, should we not regard it as an impossible operation of nature? To be able simply to perceive the objects around and within us, would seem sufficiently wonderful; but how is our astonishment augmented, when we reflect upon that talent, which enables us to recall what has passed months and years before, and that too, in many cases with the greatest accuracy?

It is a general remark, founded upon almost universal experience, that old persons lose their power of remembering; and what is still more singular, that in advanced life, we recollect better what passed at an early period than what has recently happened. These phenomena can be explained only by the consideration, that increasing age augments the rigidity and sluggishness of the several parts of the body, and together with the rest, no doubt, those which immediately minister to the mind in performing its acts of memory. Old persons see less clearly and distinctly, and are obliged to have recourse to the assistance of art, because the organs of vision become impaired by age, and why should not a failure in the memory be occasioned by a like decline in the organs that minister

to that faculty? The same view of the matter accounts for the fact, that the old can remember more distinctly what occurs in early life than those things which happen to them at a more advanced period. Their organs being sound and vigorous in youth and manhood, every idea made a stronger impression, and was faithfully imprinted and retained; whereas in old age, the organs being weakened and impaired, every impression made upon them, is like an effect produced upon a hard and sluggish substance, it is not deep and soon wears away.

I am inclined to think, that much labour has often been wasted in the cultivation of the memory, from the mode in which that object has been pursued; but when rightly nurtured, the most solid benefits will result from it. Seneca informs us, that by the mere exertion of his memory, he could repeat two thousand words upon once hearing them, although they had no dependence or connection with each other. He mentions a friend of his, Portius Latro, who retained in his memory all the declamations he had ever spoken, and never found his memory fail him in a single word. He tells us also, that Cyneas, being sent by king Pyrrhus, ambassador to the Romans, had so learnt the names of his spectators in one day, that the next day he saluted the whole senate, and all the populace assembled, each by his name. Cyrus, is said to have known every soldier in his army by name; and L. Scipio all the people of Rome. Carneades could repeat whole volumes, and Dr. Wallis make long mathematical calculations, by memory alone.* These instances show to what an extent this power may be strengthened and invigorated, even by the proper and lawful means of improving it. They should stimulate every one who is ambitious of excellence to indefatigable exertions to attain so desirable an object.

* See Rees' Encyclopedia, Art. Memory.

As to those artificial expedients which have been proposed, and in some cases tried, in order to aid memory in retaining what it has acquired, like the attempts formerly made to form an orator by rule, their success and expediency may justly be doubted. Simonides is said to have been the inventor of this artificial mode of remembrance.* Cicero and Quintilian both speak of it in terms of approbation, and I suspect, that after all it involves the only principle upon which any effectual assistance can be given to the memory. It depends upon two component parts of our constitution, both of which have considerable influence over us: viz. that of association, and another which has been generally remarked by philosophers, that things which are addressed to the sense of sight have a more lasting impression upon the mind than when barely an object of contemplation to it, or when perceived through the instrumentality of the other senses. These very considerations are alluded to by Cicero as the ground of his favourable opinion about the local memory of the ancients. No doubt some slight advantages may be derived from this expedient, to those whose duties require them to commit long speeches to memory, or follow in debates a connected chain of reasoning. How much does the eye aid

* The manner in which the local memory of the ancients was suggested to its inventor, Simonides, the celebrated poet, is curious, and perhaps worth mentioning. He was one day dining with a man of distinction, says Cicero, in Thessaly, and during the repast, was called out and obliged to leave the company, for a few moments, in order to speak with some gentlemen who had called to see him. During his absence the room in which he had been dining fell in, and killed every person belonging to the party. It appeared, upon examination, that their bodies were so much injured and altered by the casualty, that the servant who was commissioned to attend to their funerals, could not recognize their persons. In this difficulty, he appealed to Simonides, who was able to distinguish their features only by recollecting the places in which they severally sat at dinner. This circumstance suggested to him the idea of the assistance which the memory may derive from local situations.

us in the use of our maps, in the study of geography? And, then again, in the study of history, we find the facts recorded in it, more deeply imprinted on the memory by connecting them by association with the places, to which our minds have become familiarized in geography. By associating, therefore, things which we wish to retain in memory with those which are familiar, and already safely laid in that depository, and by giving to abstract ideas a local habitation perceptible to the eye, there can be no doubt, that the power of recollection may be assisted. For example, say upon the plan of the ancients, I wish to impress upon my mind the three divisions of Massillon's sermon upon the causes of infidelity, ignorance, vanity and vice. I imagine these divisions to be represented upon the three sides of my room, ignorance, written upon the front wall, vanity upon the wall on my right hand, and vice upon the wall on the left. There can be no doubt, that by this simple expedient, I have already enabled myself to remember them better than I could have done without it. But suppose in addition to this, I can imagine these ideas exhibited upon these walls by hieroglyphick symbols, or images bearing some distant analogy to them. For instance, to represent ignorance upon the front wall, let there be supposed the figure of a goose; to represent vanity, that of a peacock, said to be a vain bird; to represent vice, Milton's figure of sin, as described in his *Paradise lost*. That the subjects are of a ridiculous nature, would be rather of advantage than disadvantage in such cases. Connecting these divisions with such visible images, they now become so deeply imprinted upon the mind, it is certain, I never afterwards should forget them. This is the sum and substance of the local memory of the ancients; and from my own experience I am convinced, that to a certain extent it may be useful. I am unable to recollect the name of a gentleman of my acquaintance by the name of Richmond, and of a lady by the name of Tunis. I remember that one has the

same name as the capital of the state of Virginia, and the other that of one of the Barbary states, with which I am familiar from a knowledge of geography, and ever after I find not the least difficulty in calling them by name. Themistocles is said to have thought it an object of desire to have the power of oblivion, as he remembered too much; and Montaigne complains sadly, that his memory served him for none of the ordinary purposes of life. Both these results are easily accounted for in the characters of these distinguished men, without supposing them to have been pedantic or uncandid. Themistocles, having strong natural parts, and being constantly occupied in the affairs of the Grecian states, found it necessary to cultivate great minuteness of recollection; even in those matters which his superiority of understanding would otherwise have led him to neglect and despise, and hence his memory became burthened with unimportant facts and transactions. Montaigne, on the other hand, being exclusively occupied with wit and fine writing, let every ordinary object of attention pass by him unheeded, so that even the names of them could not be recalled. "I can do nothing," says he, "without my memorandum book; and so great is my difficulty in remembering proper names, that I am forced to call my domestick servants by their offices. I am ignorant of the greater part of our coins in use; of the difference of one grain from another, both in the earth and in the granary; what use leaven is of in making bread, and why wine must stand some time in the vat before it ferments." Father Mallebranche, who animadverts severely upon the works of Montaigne, ascribes these declarations to affectation and pedantry. "Could he be thus forgetful," says he, "*et cependant avoir l'esprit plein de nom des anciens philosophes, et de leurs principes, des idées de Platon, des atoms d'Epicures, du plein et du vuides de Leucippus et de Democritus, de l'eau de Thales, de l'infinité de nature d'Anaximandre, de l'air de Diogenes, des nombres et de la*

symmetrie de Pythagoras, de l'infinu de Parmenides, de l'un de Musæus, de l'eau et du feu d'Apollodorus, des parties similaires d'Anaxagoras, de la discorde et de l'amitié d'Empedocles, du feu de Heraclite, &c." "Yet the same author," says professor Stewart, "appears evidently from his writings, to have had his memory stored with an infinite variety of apothegms and historical passages, which had struck his imagination; and to have been familiarly acquainted with the ideas of Plato, the atoms of Epicurus, the plenum and vacuum of Leucippus and Democritus, the water of Thales, the numbers of Pythagoras, the infinite of Parmenides and the unity of Musæus." There is no inconsistency between the account given by Montaigne of his want of memory in such matters, and his capacity to recollect those important facts and doctrines, which supplied him with the materials of fine writing. The first were altogether uninteresting, and of course would not be sufficiently impressed upon the mind, to enable him afterwards to recollect them. I suspect there is scarcely any one who devotes himself to abstract study and close application to literary pursuits, who does not often experience a difficulty in recalling the names of things, which are most at the command of others.

The fact is, that even in exercising the memory a good judgment is necessary, in order to direct it in the most useful channels. We should select those ideas and facts, which are the most important, and endeavour to impress them upon our mind, and not deposit in this store-house, without discrimination, all kinds of trash. Of what advantage can it be supposed to be to any man to recollect in connection thousands of strange and unconnected names and dates, if his mind does not faithfully retain fine sentiments, wise maxims, and principles of science? Most of those methods of forming an artificial memory, which have been proposed, are rather calculated to supply us with that kind of materials, which would nourish a frivolous vanity, and

ostentation of learning, rather than the solid knowledge which forms the understanding to greatness and virtue. All those memories which have distinguished greatly their possessors, and been the means of accomplishing any useful purposes, have become such rather by their native force, and habitual and vigorous exertion, than by any adventitious aid. Continued and strenuous exertion, therefore, together with the habitual use of the pen, in recording important matters which occur to us in reading and study, are the most effectual aids which we can afford to the native power of memory. For this purpose we cannot adopt a better expedient than that of having a common-place-book, such as that recommended by Mr. Locke, in which to insert sentiments, maxims, and passages from the writers we peruse, or such as shall occasionally occur to our own minds, which are worthy of preservation. But probably the worst of all expedients, by which to impress things upon the memory, is to put them into doggerel verse. The slight share of information which we obtain in this manner, above what might be as well attained without it, is a wretched compensation to us for the injury done to our sense of harmony in poetic numbers, and the vitiation of our taste.

We conclude this part of our subject with this single observation. A disease sometimes obliterates from the mind all past events, or in other words utterly destroys our power of recollecting any thing past; and at other times, after destroying our recollection for the time, upon the recovery of health this power is renewed, and we can even recollect what we could not before our illness. Must not all these effects be referred to the action of disease upon those corporeal organs, made use of in memory and recollection? Is not the mind always the same principle?

It remains for us barely to state, and refute the objections which have been brought by Dr. Reid against the system of Mr. Locke, upon this point. In chap. 7, essay 3rd, upon

the Intellectual and Active powers, he says: "The common theory of ideas, that is, of images in the brain, or in the mind, of all the objects of thought, has been very generally applied to account for the faculties of memory and imagination, as well as that of perception by the senses. Mr. Locke, and those who have followed him, speaks with more reserve than the ancients, and only incidentally of impressions on the brain, as the cause of memory, and imputes it rather to our retaining in our minds, the ideas got either by sensation, or reflection." Here we see that Mr. Locke, after having been before accused of the heresy of attempting to explain how we perceive, is made to undertake the task of accounting for the act of memory. Both these important operations of the mind, we are told, are ascribed by him to impressions on the brain, or the introduction of images into the mind, of all the objects of thought. Now, is there any one so simple as to imagine that this accusation is well founded? Has Mr. Locke been so devoid of a just conception of the narrow limits of the human understanding, as to make the bold attempt to explain in what manner we can remember any thing? Look at the account which he gives of memory, and see if there be contained in it any thing about images in the mind, or impressions upon the brain. "The other way of retention, is the power to revive again in our minds those ideas, which after imprinting, have disappeared, or have been, as it were, laid out of sight, and thus we do when we conceive heat or light, the object being removed; this is memory, which is, as it were, the store-house of our ideas. For the narrow mind of man not being capable of having many ideas under view and consideration at once, it was necessary to have a repository to lay up those ideas, which at another time it might have use of. But our ideas being nothing but actual perceptions in the mind, which cease to be any thing when there is no perception of them, this laying up of our ideas in the repository of

the memory, signifies no more but this, that the mind has a power in many cases, to revive perceptions which it has once had, with this additional perception annexed to them, that it has had them before. And in this sense it is that our ideas are said to be in our memories, when, indeed, they are actually no where; but only there is an ability in the mind, when it will, to revive them again, and as it were paint them anew on itself, though some with more, and some with less difficulty, some more lively, and others more obscurely." Could any one who was writing with full intent to oppose what has been called the ideal theory, have expressed himself with more precision and accuracy on this subject? It is somewhat singular, that Dr. Reid never discovered in such passages as these, some reasons to doubt whether he had not misapprehended the doctrine of Mr. Locke. "Our ideas are nothing but actual perceptions in the mind, which cease to be any thing when there is no perception of them, (or what is the same thing, when we are not conscious of them); and in this sense it is, that our ideas are said to be in our memories, when, indeed, they are actually no where." Does this language look like the doctrine, that in perception, images of things are conveyed into the mind and there deposited, until by memory they are called out again to become the objects of contemplation? But when an author has once conceived in his head a new system, he listens to nothing that militates against it, while he seizes with avidity every shadow of evidence that gives it support. But a small share of philosophical candour, we think, would have led Dr. Reid to spare the criticisms upon the passage of Mr. Locke before quoted, which we shall now state, and endeavour to expose.

"In this account of memory, (says Dr. Reid, in his essay upon memory, to which we have just referred,) the repeated use of the phrase, as it were, leads one to judge that it is partly figurative." Could any one doubt that is meta-

phorical, when the author himself expressly tells us so, even if he had omitted that small expressive phrase, as it were? When he talks of our ideas being kept for some time actually in view, being imprinted on the mind and revived again, disappearing and being laid out of sight, deposited in a store-house, lest this figurative mode of expression should mislead his reader, he informs him distinctly that in perception thoughts enter the mind, and by the power of memory are again recalled, although they are themselves actually nowhere when not in the mind. Could any language be more intelligible?

Again. Dr. Reid proceeds. "But we are told, that this laying up of our ideas in the depository of the memory signifies no more but this, that the mind has a power to revive perceptions which it once had, with this additional perception annexed to them, that it has had them before." But it seems to me as difficult to revive things that have ceased to be any thing, as to lay them up in a repository, or to bring them out of it." But Mr. Locke is not speaking of the difficulty in the case. He is only informing us of the operations of nature, all whose departments are under the control of that Being, by whose power all things which are not impossible, are effected with a like facility. The Dr. continues. "When a thing is once annihilated, the same thing cannot be again produced, though another thing similar to it may." No? Could not the Supreme Being annihilate that clod beneath our feet, and in one hour restore it again? And would it not, if thus composed of all its atoms be the same clod? We distinguish different tastes. We call one the taste of the orange, another that of the pine, and a third that of the lemon. Now, after eating an orange, if we do not see another for some months after, the taste of that fruit is to us for that time annihilated. But when we obtain possession of another, should we not justly say that the same taste was again revived within us? "But" says, Dr. Reid, "Mr.

Locke, in another place, acknowledges that the same thing cannot have two beginnings of existence; and that things which have different beginnings are not the same but diverse." But Mr. Locke does not allege, that the beginning of the idea was when it was revived by memory. On the contrary he maintains, that memory can give rise to no new idea; but that all the simple ideas which we have, must derive their origin from sensation or consciousness. The Dr. draws his conclusion. "From this it follows, that an ability to revive our ideas or perceptions, after they have ceased to be, can signify no more but an ability to create new ideas or perceptions, similar to those we had before." Accordingly Dr. Reid's doctrine is, that memory is what he calls an original power, and implies an ability to create new ideas and perceptions, similar to those we had before. To this representation Mr. Locke agrees, when it is rightly understood. For Dr. Reid allows that the memory can give us no idea which we never had before. All the difference, therefore, between them is this. The one asserts, that memory only revives those ideas and perceptions, which we had before; the other, that memory creates new ideas and perceptions, similar to those which we had before. Both these writers are evidently aiming at the truth, and the latter might well have spared his strictures upon the principles of the former. The one has given as just and accurate a definition of memory as the other.

Let us compare them together. Mr. Locke, says, "memory is that power, by which we revive perceptions and ideas, which we had before." Is not this definition just in many cases? I retrace in my memory all the proofs by which Euclid demonstrates that proposition, that the three angles of every triangle, are equal to two right angles. In this case, do I not by memory revive every idea which enters into the demonstration? But the definition does not apply universally. I recollect the taste I formerly had when eat-

ing a pine-apple, or when drinking the Saratoga water. In this case, memory still gives me a distinct idea of these tastes, but cannot excite within me the very tastes or perceptions themselves. Perhaps it might be admitted that it excites perceptions, similar or analogous to those I once had. Here, therefore, Locke's definition does not strictly apply. Will Reid's, however, answer the purpose better? By no means. Would it do to say, when I remember the proofs of the proposition in Euclid before mentioned, the memory created ideas similar to those I once had, and did not revive the very thoughts themselves? Surely not.

Setting aside, then, all disposition to detect inaccuracies in the language of philosophers, we conceive that Mr. Locke upon this point is sufficiently clear, precise and satisfactory. Every one is sufficiently aware of what is meant by this power, and needs none of the lessons of the schools, to render it intelligible to him. The observations, with which Dr. Reid concludes his strictures upon Mr. Locke's doctrine about memory, are not only unworthy of him, but of the tyro in metaphysics. They are these. "But when Mr. Locke speaks of a power to revive in the mind those ideas, which, after imprinting, have disappeared, or have been, as it were, laid out of sight, one would hardly know this to be memory, if he had not told us. There are other things which it seems to resemble at least as much. I see before me the picture of a friend. I shut my eyes, or turn them another way, and the picture disappears, or is, as it were, laid out of sight. I have power to turn my eyes again towards the picture, and immediately the perception is revived. But is this memory; no surely? yet it answers the definition as well as memory itself can do." By such a flimsy sophism as this, could we suppose that the understanding of any one could be imposed upon? I direct my eyes to the picture of my friend, and recognise his likeness. I shut them, or turn them away, and his likeness disappears.

A second time I turn my eyes towards it, while open, and his likeness is revived. Is this memory, is the question asked? Now, could we imagine that this question was put by a philosopher? When I turn my eyes to the picture of my friend, is it a power of my mind alone which gives me a perception of his likeness, or is it by means of the rays of light passing from the picture, and forming an image upon the retina? The perception of the picture is an involuntary act, recollection a voluntary one. Perception, in both instances mentioned by Dr. Reid, is occasioned by rays of light; memory is an exertion of a power inherent in the mind.

“I have a power,” says the Dr. “to turn my eyes again towards the picture, and immediately the perception is revived. Is this memory?” But we may ask the Dr. if the power of turning our head towards the picture revives the perception? Could that power revive it, if the picture in the mean time had been removed? The fallacy of his argument is too glaring to escape the detection of the least discerning. The reader will perceive in this case a willingness to resort to any unfair expedient to bring Locke’s doctrine into disrepute.

CHAPTER XII.

Of Conception.

THE term conception, which implies one of the modes of thinking, has no peculiar philosophical import; and, of consequence, it is extremely difficult, nicely to mark the distinction between it and many other terms, which are nearly synonymous with it. It is nearly equivalent to the expressions, imagination, remembrance, simple apprehension, or forming an idea of a thing. Sometimes it expresses the same shade of thought with one of these terms, and, at other times, with another. It denotes the exercise of no new power of the mind, which could not be designated without the use of it; but still its use could not be advantageously dispensed with, as it serves to give copiousness, expressiveness, and harmony to our language. "By conception," says professor Stewart, "I mean that power of the mind, which enables us to form a notion of an absent object of perception, or of a sensation which it has formerly felt." Is not the office here attributed to conception, as a distinct power of the mind, always performed by memory? What, but memory, is that power of the mind, which enables us to form a notion of an absent object of perception, or of a sensation, which we have experienced before? Conception, and idea or thought, either simple or complex, are terms as nearly synonymous, perhaps, as any two which are to be found in our language. Like all other words, however, which are introduced into vulgar use, it is made to express a great variety of meanings. When we

say of the place of our nativity, which, perhaps, for many years we have not seen, that we have a distinct conception of it, what can we mean, but that by the power of recollection, we can retrace the scene which was there once presented to view, and, as it were, paint those objects anew, although with a degradation of colouring, to our mental eye? And what is this process, but forming a new complex idea of the place of our nativity, by the power of memory? When we assert, that we can form no adequate conceptions of the phenomena displayed at the poles of the earth, until navigators shall reach them, what do we mean, but that we cannot assemble together that train of ideas, which would be excited by the appearances of the earth and heavens in the polar regions, until actual experience has produced them in our minds? The conspirator is accused of conceiving a design to overturn the government, and here conception is made to include a determination of the will, as well as picturing in his mind a scheme of treason; but in all these cases, as well as numberless others, with which any dictionary of our language may supply us, it will be invariably perceived, that the term conception, implies the exercise of no new and distinct power of the mind. "It may be observed," says Dr. Reid, "in his article upon simple apprehension, that conception enters as an ingredient in every operation of the mind. Our senses cannot give us the belief of any object, without giving some conception of it at the same time. No man can either remember or reason about things, of which he hath no conception. When we will to exert any of our active powers, there must be some conception of what we will to do. There can be no desire or aversion, love or hatred, without some conception of the object. We cannot feel pain without conceiving it, though we can conceive it without feeling it." This is all strictly true, and what no one can hesitate to admit. But in all these cases, can there be discerned the slightest shade of distinction, between con-

ception, and thought or idea, and conceiving, and forming a thought or idea of any thing? Thinking is that act of the mind, which enters as an indispensable ingredient into all its operations. Take the passage of the Dr's. work above referred to, and for the word conception, substitute thought or idea, and see whether the same sentiments are not most precisely expressed. "Our senses cannot give us the belief of any object, without giving us some idea of it at the same time. No man can either remember or reason about things, of which he hath no idea." And so of the remaining sentences. Now since it appears evident, that the term conception implies the exercise of no new power of the mind, and with some slight shades of difference, arising out of its ordinary and vulgar use, is exactly equivalent to the expressions forming a thought or idea of any object, why should Dr. Reid entertain his readers with a long and elaborate disquisition about it, treating it as a subject entirely distinct from others, and enter into a learned recital of the errors, into which all previous philosophers had fallen in their several accounts of conception? Have the philosophers broached any theory about conception, distinct from the theory of ideas, upon which he had before so largely descanted? Is not philosophy rather injured than profited, by such confused and cloudy dissertations?

But professor Stewart endeavours to relieve the Dr. from this charge, by discovering a peculiar meaning of the word. "Conception," says he, "is often confounded with other powers. When a painter makes a picture of a friend, who is absent or dead, he is commonly said to paint from memory; and the expression is sufficiently correct for common conversation. But in an analysis of the mind there is ground for a distinction. The power of conception, enables him to make the features of his friend, an object of thought, so as to copy the resemblance; the power of memory recognises these features as a former object of perception. Every act

of memory includes an idea of the past; conception implies no idea of time whatever." No fallacy can be more glaring than that which is contained in this statement, when the subject is studied and rightly understood. "The power of conception," says the professor, "enables him to make the features of his friend an object of thought, so as to copy the resemblance." Now, in what manner can he make the features of his friend an object of thought, but by recollecting what he had formerly known of them, or in other words recalling the perceptions he, then, had of them? Is it not the office of that act of memory denominated recollection, to place before the view of the mind all those objects which it before perceived? In the professor's view of the matter, conception is made the herald to communicate to the mind intelligence of the past, while the sole office of the memory, is to determine that the mind had previous knowledge of this intelligence. Now, as I humbly conceive, this is entirely a new distribution of the powers of the mind, as much unknown to nature as to the researches of philosophy. Mr. Locke's views on this point also are much more just and profound. In his chapter upon retention, he defines memory, to be that power which the mind has to revive perceptions, which it has once had, with this additional perception annexed to them, that it has had them before. Mr. Locke, therefore, makes that perception, which we have in an act of memory, that we have received the same intelligence before, a mere accompaniment of that act, while Mr. Stewart would confine the whole complex act of memory to that single perception alone. Upon his principles, in short, it is not memory but conception which renews in the mind all our past knowledge, while to memory is left the discovery that it is past. Thus to alter at our pleasure, the meaning of terms long settled and distinctly understood, would be introducing strange confusion into the philosophy of the mind.

But why should I spend time in correcting the errors of an author, who himself so soon saves his readers from being misled by them, and after groping for a time in the dark, rises again into light. In his disquisition upon the memory, we find the professor, after defining it to be always "some modification of that faculty which enables us to treasure up and preserve for future use the knowledge we acquire, proceeding to make that distinction among its acts which is as old as Aristotle, and divides them into those of remembrance and recollection. "This faculty, (memory)" says he, "implies two things, a capacity of retaining knowledge; and a power of recalling it to our thoughts when we have occasion to apply it to use. The word memory is sometimes employed to express the capacity, and sometimes the power." Here we find the professor advanced into the regions of truth; but how does his doctrine here accord with that which he had held above? Let us state the case distinctly that the inconsistency may be evident.

"When a painter," says he, "makes a picture of a friend, who is absent or dead, the power of conception enables him to make the features of his friend an object of thought, so as to copy the resemblance; the power of memory, recognises these features as a former object of perception." Now, what can be meant by making the features of his friend an object of thought, but recollecting them? And yet in this case this is said to be done by conception, while in what he says of memory, the professor recognises recollection as one of the acts of memory.

Again—"The power of memory recognises these features as a former object of perception." Here memory is made that power which simply gives us notice that the knowledge which is recalled by us by means of conception, was before in our possession. But when speaking of memory, he defines it to be that power which treasures up and preserves for future use, the knowledge we acquire; and maintains that this

faculty implies two things, a capacity of retaining knowledge, and a power of recalling it to our thoughts when we have occasion to apply it to use." That is to say: in the one case, memory is described as the power which simply informs us of any part of our knowledge, when it is revived by conception, that we have had it before; in the other case, it is made the power both of retaining that knowledge and recalling it at our pleasure. Now, by conception only, we are said to recall our past perceptions; and, then, by recollection or memory. When are we to have an end of such confusion and contradiction! Could this writer have expected, that in such abstruse speculations his readers would lose all their faculties of judging and discrimination, and receive, without examination, his indigested and incoherent views?

I pass by the minor errors with which the professor's essay upon Conception abounds, as for instance, when he maintains, "that it may reasonably be doubted, if a person would not write a happier description of an object from the conception than from the actual perception of it;" and again, when he asserts, that "in the power of conceiving colours, there are striking differences among individuals, and that, in the greater number of instances, the supposed defects of sight in this respect ought rather to be ascribed to a defect in the power of conception; and again, "if it were possible for us, with our eyes shut, to keep up for a length of time the conception of any sensible object, we should, as long as this effort continued, believe that the object was present to our senses, &c. &c. and proceed, immediately, to that strange and absurd opinion advanced by him in this section, that "the exercise both of conception and imagination, is always accompanied with a belief that their objects exist. When a painter, for example, conceives the face and figure of an absent friend, in order to draw his picture, he believes, for the moment, that his friend is before him." Here, we see, that that which is above the highest effect of the histrionic art, with all its ap-

paratus of actors, scenery and costume, together with every other circumstance calculated to affect the imagination, and awake illusion of the wondering and captivated senses, is ascribed to the ordinary conceptions of men. If the professor's doctrine were true, and every time we form a conception of a dead or absent friend we really believed him to be present, should we not find ourselves as fatally haunted by frightful apparitions as was M. Nicolai, the German philosopher before mentioned, during the diseased action of his brain? Nay, the condition of ordinary persons would be infinitely more deplorable than was his. For he, after the first discomposure of mind occasioned by the appearance of these phantoms subsided, had sufficient philosophic coolness and fortitude, not merely to discredit their real existence, but even to convert them into an object of curiosity and amusement. Here, although his perceptive powers were operated upon in the same manner as if outward objects were really present, and it be, moreover, a law of nature that we have an invincible belief of the existence of the things which those powers exhibit to us; yet, from the very outset of that singular train of delusions, he disbelieved the evidence which they gave him. Although he could not avoid being disconcerted, and even agitated and alarmed by the singular appearances which presented themselves, yet, he never, for a moment, believed them to be real existences. Now, if in a case like this, the German philosopher did not even believe in the real existence of those objects which his very senses seemed to display to him, is it to be credited, that any persons, but those who are insane, asleep, or in some way disordered in mind, would believe in the existence and presence of the things which they barely conceived? As in perception there always accompanies the mind during its waking hours, a conviction that the things perceived have real existence, so in imagination or conception there as invariably attends it a consciousness, that these are merely its own acts,

which do not at all imply the present being or existence of the things.

We may, therefore, safely leave it to every judicious and reflecting man to decide from his own experience and consciousness, whether he ever in a sound state of mind, supposes the objects of his conception and imagination, to be immediately present.

We hear of no one, however sharp may be the "hungry edge of appetite," attempting to "cloy it" by catching at the "feast which he has imagined," or aiming to extinguish the "fire in his hand," by casting it upon the "frosty Caucasus," which he has only thought upon. One of the great distinctions between sleeping and waking men, between madmen and the sane, seems to be the power of discerning the difference in all cases between what Mr. Locke denominates their primary and secondary perceptions. Children and superstitious persons, indeed, sometimes mistake the phantoms which their fears have conjured up for realities, and believe themselves haunted by apparitions that have no real subsistence, but these are phenomena which are to be explained from the operation of other principles of the human constitution, and are very different from their ordinary thoughts and conceptions. Such persons are no more inclined to believe that their ordinary conceptions have objects that are immediately present with them, than the philosopher of most sober reflection and phlegmatic temperament. The idle phantoms, just mentioned, are the product of a timid imagination operating upon ignorance and credulity. Strong passions, as those of fear, resentment, love, revenge, and jealousy, throw the mind into tumult and wild disorder, and if under such influences it should in some cases, mistake its fancies for realities, it is not extraordinary: nothing can be more natural, than that Macbeth, during the perturbed state of his mind, should seem to see a dagger in the air; but from such instances we are not to expect to draw just conclusions about

the ordinary and cooler operations of the mind. We might as well maintain, that because the child or ignorant person, under the influence of fear, believes that he saw a ghost or hobgoblin, all our conceptions are made up of such trumpery of superstition.

The professor endeavours to corroborate his singular opinion upon this subject by some observations of Dr. Reid, although, in truth, they have no relation to the point. "In considering those sudden bursts of passion," says Mr. Stewart, "which lead us to wreak our vengeance upon inanimate objects, Dr. Reid endeavours to show, that we have in such cases, a momentary belief that the object is alive. "I confess," says he, "it seems to me impossible that there should be resentment against a thing which, at that very moment, is considered as inanimate; and consequently incapable of intending hurt, or of being punished. There must, therefore; I conceive be some momentary notion or conception, that the object of our resentment is capable of punishment." In another passage, the same author remarks, "that men may be governed in their practice by a belief which, in speculation, they reject. I knew a man," says Dr. Reid, "who was as much convinced as any man of the folly of the popular belief of apparitions in the dark; yet he could not sleep in a room alone, nor go alone into a room in the dark. Can it be said that his fear did not imply a belief of danger? This is impossible. Yet his philosophy convinced him, that he was no more in danger in the dark when alone than with company. Here an unreasonable belief, which was merely a prejudice of the nursery, stuck so fast as to govern his conduct, in opposition to his speculative belief as a philosopher and man of sense. There are few persons who can look down from the battlements of a high tower without fear; while their reason convinces them that they are in no more danger than when standing upon the ground." These are the passages of Dr. Reid's works, which the professor alleges in confirmation of his

doctrine, that in conception and imagination we have a momentary belief of the presence of the object conceived or imagined. It will readily be seen that he has hit wide of the mark. All the classes of phenomena mentioned by Dr. Reid, are totally distinct from those of conception and imagination, under which the professor strives to reduce them. But although the doctrine of Dr. Reid tends in no degree to relieve the opinion of the professor from that glaring absurdity, which in legible characters is stamped upon it, yet it is itself by no means free from error. When the child, for example, or foolish boy strikes, in resentment, the stone or inanimate object which has hurt him, is it to be concluded that he really believes it to be sensible, and capable of receiving injury or punishment? By no means. He conceives of it, for a moment, indeed, as being possessed of sensibility, and susceptible of injury, but he does not even for an instant, believe it to be animate. A wide distinction obtains in such cases between conceiving or imagining, and believing; which, although not noted in ordinary parlance, should be strictly attended to by the philosopher. In the vague phraseology of ordinary conversation, we are in the habit of saying, that we really believed the object or scene to be before us, which we have heard described by the orator with more than usual strength and beauty of colouring, or exhibited by the actor with extraordinary happiness of manner, and this mode of speaking may be sufficiently precise and accurate for purposes of daily intercourse; but surely, it is not, although positively asserted by professor Stewart, strictly and philosophically true. No illusion of this kind can ever be rendered so perfect, that we really believe the object to be present which is merely exhibited to the passions and imagination, however strongly they may be excited by it. We shall find this always to be true, when we come nicely to analyze our feelings, however transported we may have been at the time, and borne away by the tumult and impetuosity of our emotions.

And the same observation applies to the most finished representations of the "well-trod stage," even if "Johnson's learned sock be on, or sweetest Shakspeare, fancy's child, warble his native wood notes wild." Even in the highest wrought scenes of tragedy, when the imitation approaches nearest to perfection, the consciousness never deserts the heart that it is a fiction.* It is this inward consciousness which at the same time that the heart abandons itself to grief, and pours out in tears its virtuous sensibilities, so softens and assuages our sorrows, as to prevent them from rending and overwhelming the bosom, and renders the indulgence of emotions, thus mitigated, altogether delightful. If they could be conceived to be completely real, our pains in the indulgence of such sympathies, would become too sharp to be endured. We should fly from such unmitigated anguish. Who would croud the theatre, evening after evening, to see a real Othello, from the impulses of a furious jealousy put his Desdemona to death, or witness the touching madness of Ophelia, which would make every fibre of the heart, vibrate with agony, or weep at the expiring anguish of a Hamlet or a Cato? The people may, for a few instances, be attracted by curiosity to see the last dying struggles of the wretch who is condemned to death, and in the days of Greece and Rome, or those of tilts and tournaments, in later periods, they might derive a degree of satisfaction, from witnessing in their amphitheatre those contests in their games which terminated fatally. Their pleasure arose, on these occasions, much more from witnessing the feats of prowess and martial address in the combatants, than from their fatal terminations. But could it ever be made the favourite amusement of the people to see man-

* "During the representation of a tragedy," says professor Stewart, "I acknowledge, that we have a general conviction that the whole is a fiction, but I believe, it will be found, that the violent emotions which are sometimes produced by the distresses of the stage, take their rise, in most cases, from a momentary belief, that the distresses are real."

kind butcher each other from the influence of those malignant passions, whose direful conflicts it is the province of the drama to portray? Who would have taken pleasure in being a spectator of the scenes which passed in Rome in the times of proscription by Sylla and Marius, or in the civil wars of Pompey and Cæsar, or in the sanguinary days of Robespierre and Marat during the French revolution? And yet all these transactions furnish interesting matter for the tragic muse, and when represented upon the stage afford a high degree of enjoyment; and such is the mysterious constitution of our nature, that while the real action of these scenes would greatly shock and offend us; in the representation, the nearer the imitation approaches to reality, the more exquisite is the pleasure we derive from it. In the exhibition of such matters upon the stage, there appears to be just enough of similitude to facts which really take place to awake our virtuous sympathies, and not enough to torture and rend the heart with real agony. Besides the enjoyment we derive from simple imitation, which is always agreeable, we secretly applaud ourselves for the generous sensibility of which we are conscious, and this consideration serves also to enhance our enjoyment on such occasions. We look upon the distortions of countenance in the Laocoon, and the features of the dying Gladiator with delight, as displaying the exquisite skill of the artist, and an exact representation of nature; but who would take pleasure in having such objects presented to him in real life? That, therefore, which would be most shocking, and even revolting to the feelings in real life, may by the skill of the poet, the orator, or artist, be converted into a source of the most refined satisfaction.

Mr. Burke, in his excellent Treatise upon the Sublime and Beautiful, in the main agrees with the opinions I have expressed above. "In imitated distresses," says he, "the only difference is the pleasure resulting from the effects of imitation; for it is never so perfect, but we can perceive it is imitation,

and on that principle are somewhat pleased with it. And, indeed, in some cases, we derive as much or more pleasure from that source, than from the thing itself. But, then, I imagine, we shall be much mistaken, if we attribute any considerable part of our satisfaction in tragedy to the consideration that tragedy is a deceit, and its representations no realities. The nearer it approaches to reality, and the further it removes us from all idea of fiction, the more perfect is its power. But be its power of what kind it will, it never approaches to what it represents. Choose a day on which to represent the most sublime and affecting tragedy we have; appoint the most favourite actors; spare no cost upon the scenes and decorations; unite the greatest efforts of poetry, painting, and music; and when you have collected your audience, just at the moment when their minds are erect with expectation, let it be reported that a state criminal of high rank is on the point of being executed in the adjoining square; in a moment the emptiness of the theatre would demonstrate the comparative weakness of the imitative arts, and proclaim the triumph of the real sympathy." These doctrines are just, and in exact correspondence to those which we have before stated. But in regard to the last sentiment expressed by the ingenious author, there can be no doubt that, on any single occasion, the theatre would be deserted, however high might be the expectations of the audience, if it were reported that a criminal of high rank was to be executed in the adjoining square; but in order fairly to test the matter, suppose the same scene should be repeated in the square adjoining the theatre throughout a whole season, would the real or fictitious tragedy be most sedulously attended? I think scarcely any one can entertain a doubt on the subject. Men would be attracted by curiosity as well as sympathy, to witness a few executions of state criminals; but they would soon find their appetite for such an indulgence, if it be one, cloyed by repetition, and these scenes become too

shocking to be endured. It is true, as Mr. Burke remarks, that a very inconsiderable part of the satisfaction we derive from tragedy is to be attributed to the consideration, that it is a deceit, and its representations no realities. This is a circumstance which is rather preparative to our enjoyment, and necessary to prevent a too great excitement of our sympathetic feelings, than an important ingredient in it. Our pleasure, in such representations, when accurately analyzed, may all, perhaps, be reduced to the effect of imitation, to the enjoyment which we have from the excitement to this degree of our sympathetic feelings, to a secret approbation of our own sensibility to virtue, to a consciousness of fiction in all the scenes depicted, and to the interest which we naturally take in the display of fine writing and exalted sentiments by the author. If any thing further than what has been already adduced were necessary to show, that no audience ever completely loses its consciousness, that the scenes which are exhibited to it are fictitious, we may give the following argument which appears to us conclusive. Suppose an audience listening to the scene which is displayed, when Othello, becoming insane with ill-grounded jealousy, is smothering his Desdemona, and that some celebrated actor has wrought them up to the highest pitch of sensibility. If they believed it to be real, would it be possible for them to wait, in silence, the horrid catastrophe? Would they not involuntarily cry aloud with emotion, and undeceive Othello about the character of Desdemona, and disclose the nefarious plot of Iago? Is not the silence and emotion with which they contemplate such transactions, a secret acknowledgment, that they are inwardly sensible of the whole deceit, and, in fact, are rather endeavouring to aid the poet and the actors, in working themselves up to a state of agreeable illusion, to promote the indulgence of their virtuous sensibilities?

We are now prepared to afford solutions of all the phenomena referred to by Dr. Reid, without admitting the cor-

rectness of his doctrine, or giving any countenance to the strange and absurd theory of professor Stewart.

In the first place, when the idle boy in a fit of resentment strikes the stone which has hurt or wounded him, it is not because he believes it to be sensible or an object of punishment, but because his passions have transferred to it in his conceptions a momentary animation.* The difference between this operation of the mind, and that act of the understanding denominated belief, may be perceived in many cases. When the orator in his address makes use of the figure of personification, apostrophe, or vision; he seems in each case to have the object displayed before his eyes as really alive, or in the case of vision as immediately passing in his view; but he does not believe them to be living, or passing in his view. In the instance of apostrophe, when we address a person who is absent or dead, will any one maintain that we believe him to be present and listening to us, and do not merely conceive of him as doing so? All phenomena of this nature are to be explained upon the assumption of that principle of our constitution, which inclines us to conceive of all nature as feeling along with ourselves, and partaking of all our impressions, ideas, and our whole state of mind. The imagination and the passions naturally transfuse into every object life and thought and sensibility. The mind takes great delight in this exercise of its powers. Hence in impassioned oratory, and the higher kinds of poetry, every thing feels, lives, hears, speaks, or listens to those who address it. When Eve, at her departure from Paradise, is made by Milton, to utter that pathetick valedictory address, which is so natural and beautiful, is it to be conceived that

* Or, perhaps, after all, as a very able and intelligent friend suggested to me, the silly boy strikes the stone in a rage, without even having a conception of its sensibility, only to vent his passion, as a man sometimes, in a fit of anger, will beat the air, merely for his own relief with absurd and ridiculous gesticulations.

had she made such an address in reality, she would have believed that the garden listened to her complaints? No one can be so little skilled in human nature as to think so. And yet such language would be perfectly natural on such an occasion, and might really have been spoken.

Again: what Dr. Reid, adduces of the man, who, although as much convinced as any one of the folly of the popular superstition about apparitions, yet could not go into a room alone in the dark, or sleep in a room alone, is easily explicable upon the same principles. "Can it be said," asks the Dr. "that his fear did not imply a belief of danger? Impossible?" But allow me to ask in turn, why impossible, that he should have been afraid without any belief of danger, or even when his belief was most firm that he was in safety? Do the fears of mankind which constitute no small part of the weakness of human nature, wait for the slow progress of the understanding before they produce their results? When a man looks down from the battlements of a high tower, who has been unaccustomed to such elevations, he is perfectly convinced that he is safe, and yet does not a sense of danger give him a sensation of dizziness and inquietude? Such are the strange inconsistencies of our nature, that, although philosophy may have taught us, and permanently fixed us in a disbelief of all the superstitious tales of the nursery, yet against our judgment, reason, and common sense, they may have some influence over us. It is not in such instances that we have any belief of danger, but because fear operates upon the mind, and fear is under very little control from reason. "Here an unreasonable belief," says Dr. Reid, speaking of the person beforementioned, "which was merely a prejudice of the nursery, stuck so fast as to govern his conduct, in opposition to his speculative belief as a philosopher and man of sense." Now could he have two opposite convictions at the same time, that there were no such things as apparitions, and that there were such beings from

which danger is to be apprehended? Can the mind be said to believe and disbelieve the same thing, at the same time? But there may be a fear or dread resting upon the mind of evils which we are firmly persuaded can never happen. If the Dr. had said, that an unreasonable dread, which was a mere prejudice of the nursery, stuck so fast as to govern his conduct, in opposition to his belief as a philosopher and man of sense, he would have expressed himself correctly, and with philosophical precision and accuracy. The case of an optical experiment mentioned by professor Stewart, who, I think, discovers admirable adroitness in quoting examples that militate against his own systems, instead of furnishing them support and confirmation; will serve to show the distinction between our fear and belief, and how the first may influence the mind in direct opposition to the second, without supposing any thing like a contrary belief in the case. "In a very ingenious optical deception," says he, "which was lately exhibited in this city, the image of a flower was presented to the spectator, and when he was about to lay hold of it with his hand, a stroke was aimed at him with the image of a dagger." In this experiment, although we are perfectly sure that all is a deception, and have not the smallest idea of danger, who would not involuntarily draw back his hand at the approach of the dagger? And this would not be done from a momentary belief of danger, as Mr. Stewart supposes, but from the sheer impulse of fear or apprehension, which outstrips reason in its movements, and operates on many occasions against the firmest convictions of the understanding.

I shall conclude this article by giving a single case more in point. From the account which is given us of Mr. Hume's last moments by his friend, Dr. Adam Smith, it appears, that he made himself merry concerning a future state, conversing with great coolness and pleasantry about Charon and his boat, and the insufficiency of all those excuses which he should be able to allege to that celebrated ferryman for re-

maining longer upon earth. From these circumstances, we have reason to conclude, that both Mr. Hume and his friend, wished it to be understood, that he died with great philosophick firmness, and under a full conviction or belief of an extinction of his being at death. Now if this was the firm and sincere belief of Mr. Hume, I would not say that he still retained his unreasonable belief derived from the tales of the nursery, which prevailed over his belief as a philosopher and man of sense; but I would most decidedly maintain, that he has failed in demonstrating that philosophical fortitude and self-possession, to which he pretended. Although he did not discover the agitation and anguish of his illustrious friend and coadjutor, Voltaire, under similar circumstances; yet, still in spite of all his studied efforts to conceal it, he has displayed a deep dread and apprehension about the event of death, which he affected to despise. Death is too solemn an event to all human beings, to become an object of sport and pleasantry to any man who is in a sound and natural state of mind. The very brutes appear to give up life with reluctance, and feelings of solemnity. Mr. Hume's feelings, as affected to be exhibited, are too artificial and unnatural to impose upon those who have any insight into the constitution of human nature. His conduct on that occasion recalls strongly to mind, that of the timid boy who whistles, sings and makes merry as he passes the churchyard in order to keep up his courage. Mr. Hume's fortitude and self-possession would have appeared to be genuine, had he acted with at least that gravity which became the occasion. As the facts are related to us, notwithstanding that artificial veil which he has attempted to throw over his emotions, when by a close inspection we penetrate through it, and obtain access to the real state of his mind, we find it to be by no means an enviable one, or free from solicitude. Suppose Mr. Hume's opinions to be well founded, and the matter ascertained, that, at death, we shall all fall into utter annihilation; would not

that great event, under this view of it, be solemn and afflictive? Friends must still be parted from, the sweet light of the sun must never more visit our eyes, the sublimities and beauties of creation must become effaced to us, the joys of social intercourse, of the understanding and the heart, must be relinquished; and, added to all this, we must pass through the agonies of our expiring moments, be laid in the silent grave; and, then, have this pleasing consciousness of being dissolved into the shades of an eternal oblivion. Is there any one, in a sane state of mind, who could undergo such privations and encounter such evils, without sentiments of, at least, seriousness and solemnity? Is not he to be regarded as either partially mad, or having a mind by no means at ease, although artificially wrought up to a state of indifference and levity, who shall dare to make them a subject of derision and amusement?

The intelligent reader will perceive that we have arrived at the conclusion of our volume, without having exhausted our subject. Many of the most important powers of the mind remain to be treated of, and its most interesting phenomena to be solved. The powers of abstraction, composition, comparison, imagination, reason, the will, the affections, together with all the social and moral faculties, will, on a future occasion, we trust, should our life and health be continued, open to us a large and interesting field of investigation.

